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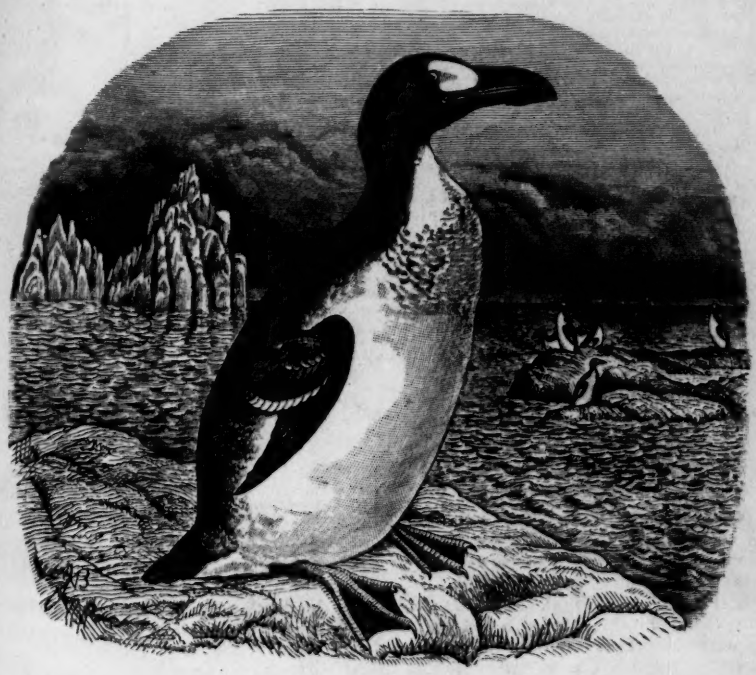

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THE AUK:

A QUARTERLY JOURNAL OF ORNITHOLOGY.

VOL. IV. APRIL, 1887. No. 2.

ADDITIONS TO THE BIRDS OF VENTURA COUNTY, CALIFORNIA.

BY J. G. COOPER, M. D.

THE 'List of Birds observed in Ventura County,' by Professor B. W. Evermann, in 'The Auk' for January and April, 1886, compiled from the observations of two years, is very full and probably nearly exhaustive for a short period of observation, comprising, as it does, 202 species, only one of which is considered doubtful by the author, and that one (*Empidonax obscurus*) was obtained by myself. It is, however, doubtful whether such a county list could ever be made complete without including ninety per cent of the birds known to inhabit California, or about 325 species. This doubt arises from the fact that Ventura County is situated within the winter range of most of the southward migrants, and also the range northward of most of the southern group of summer visitors, while it extends upward from the ocean level to 8500 feet altitude on Mount Pinos, near its extreme northeast corner.

The chief utility of such a list is, therefore, not to show what species occur in the whole county, but their modes of occurrence and other habits within a limited portion where the author lived. While he worked diligently and made several additions to the known range of certain species, as well as to their known habits, he probably did not observe two-thirds of the species to be found in the county limits, and yet it is one of the smaller counties of

California, with much less variety of surface than several others present.

The following species of his list were not observed by me during my residence of fourteen months at Saticoy, in 1872-73, viz.:

Phalænoptilus nuttalli,
Trochilus alexandri,
Trochilus costæ,
Empidonax hammondi,
Cyanocitta stelleri frontalis,
(Corvus americanus),
Poocætes gramineus confinis,
Phainopepla nitens,
Dendroica graciæ,
Dendroica nigrescens,
Dendroica occidentalis,
Geothlypis macgillivrayi,
Cinclus mexicanus,
Oroscoptes montanus,
Parus atricapillus occidentalis,
Regulus satrapa olivaceus,
Myadestes townsendii,
Hesperocichla nævia;

in all 18 species, and chiefly those frequenting the hills. The Professor calls the first part of his article "birds observed" and the second part "birds obtained" but does not positively state that he preserved all the species, and a doubt therefore exists as to the specific identity of a few, viz.:

Uria troile californica,
Larus cachinnans,
Grus mexicana,
Chordeiles virginianus henryi,
Corvus americanus,
Corvus caurinus,
Dendroica nigrescens,
Dendroica occidentalis,
Parus atricapillus occidentalis.

He has also admitted at least two species which he did not obtain within the county—*Ptycorhamphus aleuticus* and *Cepphus columba*, stated to be "rather common about the Santa Barbara Islands," some of which belong to other counties. In a late description of Ventura County, only the nearest island, Anacapa, and the most distant, San Nicolas, are said to belong to it, so that specimens from the other four islands would not be within its political limits.

The fact of their occurrence on the islands is, however, in itself, almost positive proof of occurrence in Ventura County, since they wander throughout the channel between the mainland and the islands, and if not coming ashore voluntarily, are washed ashore after winter storms which kill many of the old or diseased sea-birds. But the same cause will also bring ashore, at times, all the species known to inhabit the islands, and we may, therefore, safely add

Brachyramphus marmoratus,
Brachyramphus hypoleucus,
Fulmarus glacialis glupischa,
Fulmarus glacialoides,
Puffinus creatopus,
? Puffinus stricklandi,
Oceanodroma melania,
? Oceanites oceanicus,

found by myself and others, two species of which are a little doubtful, though representing species observed.

Following the same reasoning we may safely assume that all the species found in Santa Barbara County occur also in Ventura, as the former county lies entirely west of Ventura, and extends north of it only a few miles, thus being within the same degrees of latitude and bordering on the "Santa Barbara channel" also, which runs there east and west. We thus find the following to be added from my own collections at Santa Barbara:

Urinator lumme,
Pelecanus californicus,
Oidemia americana,
Oidemia perspicillata,
Branta nigricans,
Botaurus exilis,
Himantopus mexicanus,
Macrorhamphus scolopaceus,
Heteractitis incanus,
Arenaria interpres;

and from Mr. Henshaw's Report,

Phalacrocorax pelagicus resplendens,
Merganser americanus,
Clangula hyemalis,
Rallus obsoletus,
Porzana jamaicensis,
Ammodramus savannarum perpallidus;

all swimmers or waders except the last: total, 24 to be added from the westward.

Mr. Henshaw traversed Ventura County from west to east, but his report does not specify the localities within its limits where any species were collected additional to the list, and travelling in the driest months he saw very few of interest between the coast and the "Tejon Mountains," which lie partly within the the northeast corner of the county. There a different group of birds was met with, between 4000 and 8500 feet, at Mount Pinos.

As Fort Tejon is only about ten miles from the boundary of the county, and in the mountain region, its birds must fairly represent the group inhabiting that region. I have therefore quoted from the collection made there by John Xantus in 1857-58, published in the 'Proceedings' of the Philadelphia Academy of Natural Sciences by Professor Baird. He obtained in all 144 species, of

which ten or fifteen were probably obtained at the lakes in Tulare Valley, being waders and swimmers, only one of which, *Dendrocygna fulva*, has not been found on the coast. Omitting this, the land birds are,

Syrnium occidentale,
Nyctala acadica,
Trochilus calliope,
Contopus borealis,
Picicorvus columbianus,
Carpodacus cassini,
Spinus pinus,
Vireo solitarius cassini,
Helminthophila ruficapilla gutturalis,
Certhia familiaris americana,
Parus gambeli.

To these we may add Henshaw's Tejon Mountain birds, *Dendragapus obscurus*, *Xenopicus albolarvatus*, *Vireo solitarius plumbeus*, and *Sitta pygmæa*—making fifteen not found in the lower western tracts, though some of them are reported from Santa Barbara by Streator, as rare winter visitors.

I may here refer to the list of birds lately published by C. P. Streator in the 'Ornithologist and Oölogist' for April, May, and June, 1886. He may be in error in a few cases in identifying the species, such as *Tringa canutus*, *Piranga rubra cooperi*, *Polioptila plumbea*, and *Turdus ustulatus swainsoni*, and longer observation will probably change his opinions as to the habits of some species, but still the list adds one water and one land bird to those before known in the region. I could add several to the birds from migratory species found in counties farther south, which must pass through Ventura County, but will leave them out at present.

Though not admissible as birds of Ventura County, those obtained at Santa Barbara, especially the land species, are almost certain to be found in the former county.

The collectors on the Pacific R. R. Surveys in 1853-55 traversed the east and west ends of the county, which was not then separated from Santa Barbara County, but I have not found any additions to the list in their reports, nor does Dr. Heermann's account of collections at Fort Tejon contain any.

The absence of lakes and deserts in Ventura County deprives it of the species found only in such localities in Kern County on the north and Los Angeles County on the east, except as stragglers, so that we cannot assume that any of them are found in it until actually recorded. The 24 seashore birds, and 15 of the mountain fauna are, however, without doubt, to be included in the list.

My own additions to the Ventura County avifauna have nearly all been published as from Southern California. Some references will be given to the various works in which they are mentioned when not of easy access.

I collected chiefly near the village of Saticoy, eight miles east of San Buenaventura, and six or seven from the nearest part of the seashore. The Santa Clara River runs half a mile distant, but is dry in summer for seven or eight miles along that part of its course, leaving a wide, sandy and gravelly bed, destitute of vegetation except on a few higher patches where small poplar and willow trees grow, with low shrubbery, and which become islands in the high water of winter. Some sandhills along this portion also sustain thickets of low shrubbery, much like that of the desert regions east of the county. At Saticoy, however, about 30 feet above the river-bed, springs issue from the edge of the 'mesa' or terrace for half a mile, constant in summer, and forming a considerable marsh, about half of which was then covered by willow groves, thirty or forty feet high, and uniting, the waters form a brook large enough to run a mill at all seasons, discharging within a mile, into the bed of the river. From the river bed the valley slopes gently upward to the hills of the 'Sulphur Range' on the north, rising about 200 feet in three miles, and is naturally prairie land, producing no trees. At that time about a third of the valley was cultivated in grain and young orchards; but these were still too small to bear fruit or to have any influence on the birds. The hills northward were also grassy, with scattered oaks and other trees in the cañons between. The Saticoy springs furnished the only water in summer, and the only tree shelter for a circuit of three or four miles, the brooks running from the hills drying up nearly to their sources. About three miles east of Saticoy the Santa Clara River runs permanently and a grove of poplars and willows lines its marshy shores for several miles. Near this grove was the oldest orchard in the valley, the trees quite large and productive, forming an attraction to many birds that eat the fruit and build in the trees. In my notes on birds I call the orchard and grove referred to East Grove. A water-ditch was dug from the river above this grove, intended to carry water to San Buenaventura, but being too small the water was all used by the time it got a mile or two west of Saticoy, and had little if any effect on the prairie birds' habits.

The old Indian-Spanish natives that formerly lived at Saticoy, had also cultivated a thicket of *Opuntia tuna*,* a small vineyard, and a few pear trees on the edge of the marsh.

About three or four miles west of Saticoy another grove of poplars, willows, and stunted live-oaks, partly open and partly crowded with dense shrubbery, lay along the south bank of the river for three miles, and was the most productive bird-hunting locality I found in the valley, though many species of the hills were rarely seen there. I have called this West Grove.

I also made several trips into the hills, once up to the pine region, about 3000 feet altitude, finding the same birds mentioned by Professor Evermann, with the exceptions before noted. I also visited the seashore often, and made two trips across the level plain south of the river to the west end of the Santa Monica range of hills at Point Duma. No birds were seen there, however, that are not also found in other parts of the surrounding region.

1. **Tantalus loculator** (188). Small flocks or families came to Saticoy in June, both of 1872 and 1873; probably broods raised farther east, and possibly along Santa Clara River. They doubtless breed in San Joaquin Valley, as some are shot there every year. After leaving the nest the broods of young wander, and I have several times seen them flying at midday in wide circles high over San Francisco Bay. I have also seen one from Santa Barbara. One was shot some years since at San Leandro near Haywards, having incautiously alighted on a shade tree by the roadside; and these young birds always seem destitute of that natural fear of man so necessary for their safety. Like many other large birds of California, they will soon become extinct there, unless they acquire this protective instinct.

2. **Rallus virginianus** (212). I shot several of this species on the marsh at Saticoy, and heard them during the whole year, so they no doubt breed.

I did not see the large *R. obsoletus* there, but as it is chiefly a salt-water bird, and has been obtained at Santa Barbara, also by myself at San Pedro Bay (where it breeds), it is doubtless to be found near the seashore in Ventura.

3. **Porzana carolina** (214). Quite common with preceding (212). I shot one in winter, but doubt if it breeds there.

4. **Phalaropus lobatus** (223). A flock was seen in a pond near the seashore in July. A few occur in such ponds along the coast in every month except, perhaps, June, but I suspect they are barren birds. I shot one in perfect nuptial plumage in San Diego County, May 1, 1872, the only one seen there, about fifteen miles inland.

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*A Mexican species, much larger than the native kinds found on the dry plain.

5. **Totanus solitarius** (256).—I saw some of this species in winter, near fresh water streams.

6. **Symphemia semipalmata** (258).—This was a common shore bird near the salt marshes in winter, as elsewhere on the coast of California, and I think some remain to breed.

7. **Ægialitis semipalmata** (274).—Also found on the seashore in winter.

8. **Ægialitis montana** (281).—Small flocks came on the prairies near Saticoy from the eastward, and I shot several in December. They are also brought from Sacramento Valley in winter to San Francisco.

9. **Buteo swainsoni** (342).—I shot four of this species, chiefly in the West Grove, where they came in flocks in September. Only one was of the pale variety, which is rare near the coast. They remained common during the next summer and I saw one on its nest in the grove April 29; also several young about Santa Paula, July 8.

(See notes on the flocking of this species, and other remarks in the 'New Facts on Ornithology of California,' in Proc. Cal. Acad. Sciences, VI, 189.)

10. **Archibuteo ferrugineus** (348). I obtained two during the winter and saw many more, besides some in summer which probably had nests in the hills near by.

11. **Aquila chrysaëtos** (349). Not rare during my residence, and I have several times been within fifty feet of them, both sitting and flying. One was also offered me that was shot in the wing near town. Their destructiveness to lambs causes them to be shot without mercy by farmers, and they are becoming scarce. Coming from the thinly peopled regions of the north, or the mountains, all these Raptores are slow in learning the fear of mankind.

12. **Falco mexicanus** (355). I did not obtain a specimen but saw what I thought to be this bird several times, generally distinguishable by its light brown color, and its habit of frequenting the dry prairies away from water. Common resident in Southern California.

13. **Falco peregrinus anatum** (356). I shot one in the West Grove that had nearly as pale brown color as the preceding. I have passed in a carriage within ten feet of one on the Los Angeles plains, where it was so intent on devouring a Duck it had captured as to pay no attention to our team.

14. **Falco columbarius** (357). I shot three of this species in winter, all agreeing with the typical form.

15. **Pandion haliaëtus carolinensis** (364). I did not think Fish Hawks worth shooting, but saw a few near the coast where they were then plenty at all seasons, and little molested.

The seven Raptores here given, but not seen by Evermann in Ventura, must have become much rarer or more wary since I lived there.

16. **Sphyrapicus ruber** (403). One specimen shot November 7, near Saticoy, was all I met with.

17. **Colaptes auratus** (412). I shot one in the West Grove in November, and as it is everywhere rare on this coast, it may be considered a

winter straggler, possibly from Alaska. (See 'New Facts,' etc., for further particulars; also the Appendix to Vol. III, North American Birds, where several other of these Saticoy birds are mentioned.)

18. **Chordeiles texensis** (421). A rare bird in the valley, and probably this is the limit of its northern range. I shot one April 15, in the West Grove, of such large size that it would have been taken for *C. virginianus*, if not distinguished by the specific marks, especially the position of the white wing-patches. Length, 9.12; extent, 22.25; wing, 8; tail, 4.60.

19. **Chætura vauxii** (424). Migrating flocks appeared April 22, 1873, at Saticoy, but did not remain, seeking the high pine woods at that season.

20. **Empidonax difficilis** (463). Arrived at Saticoy March 18, 1873, but none remained near there in summer, although, as Henshaw found them at that season in Santa Barbara and eastward, they no doubt breed in the hills near by.

21. **Empidonax pusillus** (465). First seen at Saticoy, May 22, and appear to be always late in arriving in California. They frequent the swamps at Saticoy with the last species, and are reported by Henshaw to build in similar willow groves at Los Angeles, though I have also found them in summer high on the mountains. They also breed in a willow swamp near Pleasanton, Alameda County.

E. obscurus (469). I mention this to confirm Evermann's belief in its occurrence, and the eggs he obtained are good evidence that it breeds. I found them only in winter, killing two on November 19 and December 14, besides seeing others, which makes it probable that a few winter there.

22. **Pyrocephalus rubineus mexicanus** (477). I shot two perfect male specimens of this brilliant subtropical bird in West Grove on October 21 and November 7. Seeing no more west of the Colorado Valley, except one near San Diego, I considered it a rare species near the coast, but one that probably breeds in the county. The two shot had but lately obtained perfect plumage, and seemed likely to be young from the same nest.

23. **Corvus corax sinuatus** (486). The Raven was very common, especially about sheep ranches, and some were killed while I was there for destroying lambs, so that they are no doubt scarce now. I once counted thirty soaring with Turkey Buzzards, above a sheep fold near East Grove, is is their frequent habit about midday, after feeding on dead sheep when the flocks had gone out for the day. A fine male, killed November 20, measured 23.40; extent, 46.30; wing, 16.25. I cannot but believe that this is the species taken for *C. americanus* by Evermann, while he took the latter for *C. caurinus*. Both being rather smaller in southern California than farther eastward, it was a natural mistake to make, though the habits of the Raven are very different from those of Crows. A pair of Crows shot November 6, at Saticoy, measured, ♂ 17.75; extent, 36.50; wing, 12.25; ♀ 17.50; extent, 35; wing, 11.75. They are thus of middle size between eastern *americanus* and northwestern *caurinus*. Mr. Henshaw also considers the Crows of this region different from *americanus* of the East, and calls them *caurinus*. I have before tried to show that all the West Coast Crows form one variable species (omiting the Raven).

24. **Spizella breweri** (562). I shot two from a small migrating flock of this species near East Grove, April 10, the only time I met with any, and I suppose, therefore, that they do not breed there. I never saw them elsewhere in Southern California, and noticed a marked difference from the *S. pallida* I got at Fort Mojave.

25. **Melospiza lincolni** (583). Not rare about Saticoy Grove in winter, where I preserved two. The newly-fledged young of *M. fasciata samuelis* is so similar, that, before shooting some, I thought *M. lincolni* had remained in summer, but have since found the nest of the latter only from 7000 to 9000 feet altitude in the Sierra Nevada.

26. **Passerella iliaca unlaschkensis** (585*a*). A few of this species wintered near Saticoy, and I preserved two, of which one, sent to Washington, was found by Mr. Ridgway to be intermediate between the northwestern and eastern varieties. (On the dates of migration of this and other birds here mentioned, see Proc. U. S. Nat. Mus. for 1880, pp. 241-251.)

27. **Helminthophila celata lutescens** (646). I shot one at Saticoy, and know it to be a constant resident in the brushy cañons among the hills of Southern California, but not easily distinguished at a distance from some other small birds, unless when its peculiar song is heard in the spring.

28. **Troglodytes hiemalis pacificus** (722). Three or more of this species remained in the willows at Saticoy all winter, and I preserved one. This is about its most southern range.

29. **Cistothorus palustris** (725). A few seen in the Saticoy marsh in winter only.

I may add a few notes on the breeding and other habits of some other birds in Evermann's List. Some of the island birds, especially burrowing species, are known also to breed in high bluffs on the mainland, such as border the northwest and southwest corners of the county. These 'probable' breeders are *Cerorhinca monocerata*, *Ptychoramphus aleuticus*, *Brachyramphus hypoleucus*, *Cepphus columba*, etc. *Phalacrocorax pelagicus albociliatus* is not a 'probable' but a certain breeder on the islands, as I got eggs there. It also breeds on ledges of cliffs along the rest of the coast, as do many other water birds, but perhaps not within the county. *Anas boschas* is also a certain breeder in Ventura County. Of land birds *Amphispiza belli* is more than probably a breeder, as I found nests at San Diego, and breeding birds at Monterey and on the islands in summer, among shrubs along the sea-shore. *Pencæa ruficeps* is also a summer resident on the hills, and on some islands, where they doubtless breed. *Vireo belli* I found a nest of at Saticoy in a low willow, as described in App. Vol. III. N. A. Birds. I have no doubt, also, that *Vireo huttoni* breeds, as it is a constant resident, though I never found the nest. (See Orn. of Cal., I 122, as to early laying at San Diego.)

Dendroica æstiva is also a certain breeder there, as I got several nests in the willow grove at Saticoy.

Turdus ustulatus I also consider a breeder, though I got no nests in the county, as I saw them in June in willow groves about Los Angeles, and they breed in abundance further north.

On May 10, 1872, I visited the mouth of the river purposely to see what birds bred there, but I found only a Mallard sitting among the cat-tails in the wettest part of the marsh, most of which seemed too dry for safety, as eggs on the ground would have been exposed to many wild animals' depredations. (Perhaps the eggs of *Anas boschas* were taken for those of *Aythya americana* by Evermann.) Cattle grazed all over the marshes.

I must remark, however, that the winter and two summers partly spent by me at Saticoy were uncommonly dry, and it is probable that wetter seasons may make the marshes along the twenty miles of low coast line more suitable for marsh-breeders. I could ride a horse through almost any part of them, the exceptions being some salt lagoons encrusted with the white crystals, and unfit for nests, besides being almost deserted by all the birds, those seen being only a few small Waders and Sparrows. As the river is subject to violent floods in winter, which change its channels and make new islands near the mouth, which becomes blocked up by sandhills in summer, from the waves beating on shore, the advantages for birds to breed there must vary much in different years.

DESCRIPTION OF A NEW SPECIES OF *RHAMPHOCINCLUS* FROM ST. LUCIA, WEST INDIES.*

BY CHARLES B. CORY.

Rhamphocinclus sanctæ-luciæ, sp. nov.

SP. CHAR.—Top of the head dark brown, showing a dull rufous tinge; back and rump rufous brown; lores and below the eye black, shading into brown on the ear-coverts; throat and breast pure white; belly white; sides of the body chocolate brown; wing and tail dark brown; bill very dark, nearly black; legs olive brown.

Length, 8; wing, 3.10; tail, 3.60; tarsus, 1.15; bill, .85.

Habitat. St. Lucia, West Indies.

[* An author's edition of 250 copies of this paper was published Feb. 3, 1887.—EDD.]

The St. Lucia bird differs from that found in Martinque in having the upper parts brown instead of dark slate color. The brown marking on the sides of the body is of a different shade, the black on the lores is more extended, the tail-feathers are broader, and the bird generally somewhat larger.

The type is in my collection, No. 2500.

A LIST OF THE BIRDS COLLECTED BY MR. W. B. RICHARDSON, IN THE ISLAND OF MARTINIQUE, WEST INDIES.*

BY CHARLES B. CORY.

Myiadestes genibarbis *Swain.*

Margarops densirostris (*Vieill.*). This bird varies considerably in coloration in the different islands where it occurs. Specimens from Dominica are intermediate in color between *fuscatus* and the true *densirostris* from Martinique. The St. Lucia *Margarops*, a single specimen of which is in my collection, has the throat white, and the general color is darker than in the Martinique bird.

Margarops montanus (*Vieill.*).

Cinclocerthia gutturalis (*Lafr.*).

Mimus gilvus (*Vieill.*).

Thryothorus martinicensis *Sclater.*

Dendroica rufigula *Baird.*

Seiurus noveboracensis (*Gmel.*).

Setophaga ruticilla (*Linn.*).

Certhiola martinicana *Reich.*

Vireo calidris (*Linn.*).

Euphonia flavifrons (*Sparrm.*).

Saltator guadeloupensis *Lafr.*

Loxigilla noctis (*Linn.*). Much variation in coloration is shown in specimens from different islands, but a careful examination of a large series of specimens fails to show any constant characters by which they may be separated specifically.

[*An author's edition of 250 copies of this paper was published Feb, 3, 1887.—EDD.]

Euetheia bicolor (*Linn.*).
Icterus bonana (*Linn.*).
Quiscalus inflexirostris (*Swain.*).
Elainea martinica (*Linn.*).

Blacicus martinicensis, sp. nov.

SP. CHAR.—Top of the head smoky black; back and upper tail-coverts dark olive; throat ashy, becoming tinged with tawny brown on the breast; belly dull rufous brown, extending upon the under tail-coverts; tail dark brown; upper mandible black; under mandible pale yellow; feet dark.

Length, 4.80; wing, 2.60; tail, 2.50; tarsus, .60; bill, .50.

HABITAT. Martinique, West Indies.

This supposed new species resembles *Blacicus brunneicapillus*, but has the rufous tinge paler on the underparts. The head and neck are darker. A larger series would determine more satisfactorily whether the Martinique bird is not a dark-colored wanderer from Dominica; but judging from the material before me I am forced to consider them distinct.

Eulampis jugularis (*Linn.*).
Eulampis holosericeus (*Linn.*).
Thalurania bicolor (*Gmel.*). Not precisely recorded from Martinique.
Bellona cristata (*Linn.*).
Crotophaga ani (*Linn.*).
Coccyzus minor (*Gmel.*).
Ceryle stictipennis *Lawr.* A fine adult female of this species was contained in the collection. It had not been previously recorded from Martinique.
Buteo latissimus (*Wils.*).
Falco columbarius *Linn.*
Falco caribbæarum (*Gmel.*).
Columba corensis *Gmel.*
Columbigallina passerina (*Linn.*).
Geotrygon mystacea (*Temm.*).
Geotrygon montana (*Linn.*).
Gallinago delicata (*Ord*).
Tringa maculata (*Vieill.*).
Ardea virescens (*Linn.*).
Nyctiardea violacea (*Linn.*).
Sterna anosthæta *Scop.*

THE NEW ENGLAND GLOSSY IBISES OF 1850.

BY F. C. BROWNE.

THE history of the first positively known appearance of the Glossy Ibis in Massachusetts and the second in New England (Linsley, Connecticut, 1843, being first) has been but imperfectly written, the latest and fullest account being that by Dr. Coues in Stearns and Coues's 'New England Bird Life.' Having memoranda made at the time on all the five examples then taken, and two of them having passed through my hands soon after they were shot, it seems to rest specially with me to supply the details that are lacking.

I was at that time in the junior class at Harvard College, and an active member and Curator of Ornithology of the Harvard Natural History Society, then a wide-awake students' society, under the presidency of Storer, son of the well known icthyologist, Dr. D. H. Storer of Boston.

To avoid confusion I will number the specimens 1, 2, 3, 4, and 5, and from notes made at the time, from memory, and from subsequent inquiries, tell their story.

No. 1. The Cambridge, Mass., bird.—Entry in note-book: "May 8, 1850. Had the pleasure this morning of examining a fine specimen of a rare bird, the Glossy Ibis (*Ibis falcinellus* of Aud.). It was shot at Fresh Pond in this town by classmate E. Brown, from a flock of three. He will present it to our Society, a valuable acquisition. Andubon says, 'of exceedingly rare occurrence in the United States, but abundant in Texas'; and adds that he knows of but four shot in the United States. Nuttall says, 'a specimen occasionally exposed for sale in Boston market.' *The color of bill varies materially* from Audubon's description. He has it, 'bill black'; in this fresh-killed specimen it is very nearly clay color, with a tinge of green. Nuttall says 'greenish black,' which is nearly as far out of the way."

As Curator of Ornithology the bird came into my charge, and I took it to Ogden, then the leading taxidermist of Boston, for mounting. The older bird-men will remember Ogden's den in the attic of the old Tremont Temple, with the magnificent moose in the passageway. The building was burned soon after, Ogden losing everything.

"May 11. Meeting of the H. N. H. S. I announced the donation of the Ibis, with a few words as to its rarity, etc. Much satisfaction expressed. After the meeting Storer, Ball (a leading member), and self, talking the matter over, came to the conclusion to propose to the society that we present the Ibis to the Boston N. H. Society, as of great value there from having been obtained in the State, and as it would there be less liable to possible injury or loss."

"May 24. Meeting H. N. H. S. Exhibited the Mounted Ibis. President introduced the matter of presenting it to the Boston Society, giving the reasons therefor; some opposition was naturally manifested, but it was voted so to do."

"May 25. Delivered the Ibis to Dr. Cabot, Cur. Orn., B. N. H. S. He informed me that the specific name *falcinellus* was incorrect, our bird being two inches longer than the African species, with corresponding difference throughout. Donnovan, he said, had named it *guarauna*."

"Nov. 10. More light on the Ibis. Dr. Cabot said at a recent meeting B. N. H. S. in correction of a previous statement, that Bonaparte, in his 'List' of 1838, had separated our bird as *Ordii*."

This example is still in good condition in the Boston Society's collection.

No. 2. The Concord, Mass., bird.—This must have been shot at about the same time as No. 1. The first intelligence of it is entered "May 25. Mr. Thoreau tells me of a Glossy Ibis shot on the river in Concord by Mr. Melvin, and that he has given it to Mr. Holbrook, who has stuffed it." I went up to Concord a few days after (that being my home at the time), identified the bird, and bought it of Holbrook. Took it to Ogden to be set up in better shape, and, as I had not then commenced a collection, gave him permission to dispose of it, if wanted. He soon after sold it to Dr. J. N. Borland, of Boston. Inquiring lately of Dr. Borland as to whether he still held it, he informs me that a few years ago he presented it to the Boston Natural History Society.

Nos. 3 and 4. The Middleboro', Mass., birds. — Entry: "May 25. Calling at Ogden's he told me that he had mounted two more Ibises, which came from Middleboro', in this State." There were *three* in this flock also, two being killed at one shot by a farmer living near Assawampsett Pond in that town, on May 6 or 7. They were purchased by Professor Jenks, then prin-

cipal of the Academy there, mounted by him and placed in his cabinet. On the subsequent appointment of Professor Jenks as Curator of the Museum of Brown University, at Providence, R. I., he transferred them to the collection of that Institution, where they now are. (Jenks, in lit., 1886.)

No. 5. The Middletown, Conn., bird.—The circumstance of being recently enabled to give the exact date of this specimen, till now unknown, or at any rate not recorded, led me to look up the materials for this article. In examining a packet of manuscript, etc., which had been undisturbed since my college days, I came upon a newspaper clipping giving the particulars of the capture, over signature, as follows:

"Middletown, Conn., May 16, 1850 [*cf.* N. E. Bird Life, II, p. 256—Dr. Coues's surmise as to date thus shown to be well founded]. "A Glossy Ibis, *Ibis falcinella* [sic] was shot at this place May 9, time of a high flood. Length, 28 in., bill 5 in., stands 18 in. high. The man who shot it remarked how tame it was. It has been carefully preserved, and is now in my cabinet. By the papers we learn that a similar bird was shot in Cambridge, Mass., on the 8th. Very rare in the United States; this is the first to our notice in Connecticut. Bonaparte was the first to show that *Tantalus mexicanus* of Ord was the *Ibis falcinella* of Europe.—J. BARRATT."

This is undoubtedly the specimen spoken of by Merriam as being now in the Museum of Wesleyan University, Middletown.

In review, the probabilities are that a flock of six of these birds arrived in Southeastern New England on or about May 7; dividing into threes, one trio alighted at Middleboro', and the other at Cambridge. Five of them were 'taken in,' as above, during the ensuing week. It is probable that the Middletown bird was the survivor of the Middleboro' trio, and that the Concord bird (the only one seen there) was one of the two that escaped at Cambridge, leaving one unaccounted for, which very likely was wounded when his companion fell at Fresh Pond, and perished somewhere unobserved. The distance between the two extremes, Middletown and Concord, is only about ninety miles.

With the exception of two instances (Southern New Hampshire, 1858, and Nantucket, 1869—both solitary birds as far as known), twenty-eight years almost to a day elapsed before the Glossy Ibis again appears in New England records. May 4 and

5, 1878, three specimens were obtained on Cape Cod. This is the last visit recorded to date.

The confusion in regard to the Glossy Ibises of the United States, as partially indicated above, has been cleared up only at a comparatively recent date. *I. falcinellus* (now *Plegadis autumnalis*) is the species occurring from Florida northward along the Atlantic coast and in the West Indies, and is identical with the Old World bird. *I. guarauna* (now *Plegadis guarauna*) is the southwestern and western species; and the supposed new species, *thalassinus*, has proved to be the latter in immature plumage.

Note.—References not given in the above may all be found in Stearns and Coues's 'N. E. Bird Life,' II, p. 255 et seq.

A LIST OF THE SUMMER BIRDS OF THE PRESIDENTIAL RANGE OF THE WHITE MOUNTAINS, N. H.

BY ARTHUR P. CHADBOURNE.

THE following list of the summer birds found in the Presidential Range of the White Mountains, New Hampshire, is based on numerous trips of from one to three days made during the summer of 1884, and on two weeks spent in the 'Great Gulf' early in July, 1886. The number of species observed is very small, but the mere fact that so few were found is of interest, and the absence of many birds which are abundant in the country below makes the summer fauna of the mountains stand out in much stronger contrast. The eastern and northern slopes of Mt. Washington itself were the most carefully worked up, though one or two trips were made to the 'Northern Peaks' (Mt. Madison, Mt. Adams, etc.) in September, 1884. The southern and western slopes were not visited, excepting a small part of the old 'Crawford Bridle Path.'

Mr. William Brewster, who was with me on two occasions in 1884, and Messrs. C. R. Lamb and J. L. Goodale, who camped with me in Great Gulf in 1886, have generously placed their notes

at my disposal, and to them I am indebted for much valuable information.

The Presidential Range consists of Mt. Washington (altitude, 6293 feet) "the highest peak east of the Rocky Mountains, and north of the Carolinas," and of a number of lesser summits directly connected with it. As a rule these are only more or less exaggerated spurs of the great mountain itself, but on the northern side there is a lofty ridge, which is everywhere more than 4900 feet in altitude, and connects the high summits of Mt. Madison (5365 feet), Mt. Adams (5794 feet), Mt. Jefferson (5714 feet), and Mt. Clay (5553 feet) with each other, and also with Mt. Washington. At first this ridge runs almost north, then turning towards the east, it forms the northern and western walls of a huge gorge, called the Great Gulf, the southern wall of which is Mt. Washington itself. It was on this southern wall that we camped in 1886, having followed the bed of a mountain stream from a point a little above the fourth mile-post of the carriage-road down to an altitude of 3140 feet, which was the highest point at which we could find timber large enough to peel for bark. The carriage-road from the Glen ascends along the southern edge of the Great Gulf, but is entirely shut in by forest until within a few rods of the Half-way House (altitude, 3840 feet). Above this it passes through a tract of low matted spruce before it reaches the bare rocks and the region of hardy alpine plants and grasses, which extend to the summit of the mountain.

Tuckerman's Ravine, much smaller than the Great Gulf, is on the eastern side of Mt. Washington. At an altitude of about 4200 feet it is divided into two distinct parts by a rocky wall, only broken at one place where the stream from the 'Snow Arch' above passes through. The broad lower portion is covered with spruce and fir forest and contains two small ponds, the largest of these, called Hermit Lake, is at an altitude of 4100 feet. The upper part is surrounded on three sides by precipitous cliffs, in some places said to be one thousand feet high, and in their crevices grow a few alder bushes and many interesting plants and grasses. Under these cliffs the snow remains at the head of the Ravine until late in August; and early in July, 1886, it reached so far down that many of the alders were still almost covered with it and were as bare as in midwinter; while still lower they were in full flower and the grass and early spring plants were just beginning

to appear. A stream runs under this bank of snow, and cutting a deep cavern on its way, called the 'Snow Arch,' continues through the Ravine to join the Ellis River at the base of the mountain. Along the banks of this stream from the end of the Snow Arch to the spruce and fir forest below are dense alder thickets, which extend several rods back on each side, and are still farther prolonged by a dense growth of scrub spruce and fir nowhere over six feet high. This was a capital place for such birds as Black-polled Warblers, Juncos, and White-throated Sparrows, and they were more abundant here than at any other point visited, with the possible exception of the low forest opposite the Half-way House.

The changes in the fauna cannot be better seen than by walking up the carriage road from the Glen to the summit. For the first mile or two the forest is largely fine old growth hemlocks, spruces (*Abies nigra*), and birches, with cornels, elders, spiræas, and hazels along the roadside, and here such birds as the Hermit Thrush, Black-throated Blue Warbler, Black-throated Green Warbler, Canadian Warbler, and Red-eyed Vireo occur. Then there is a change, the fine old trees gradually give place to more and more stunted growth, the firs and spruces become more plenty, and at last almost entirely replace the hard wood trees, except on some slide or clearing where there is a dense growth of young birches and poplars; the cornels, elders, etc., disappear, and low birches, alders, and moose wood (*Viburnum lantanoides*) take their place. At the beginning of the fourth mile there are frequent patches of Labrador tea and mountain blueberries, while an occasional painted cup or alpine sandwort show that the lowest limit of an alpine fauna has been reached. There is a similar change in the birds. Olive-backed Thrushes still occur, but the harsh note of the Bicknell's Thrush is also heard, Black-poll Warblers begin to sing along the roadside, and the Hudson's Bay Chickadee becomes more common than the Black-capped.

About four miles by the carriage road from the base of the mountain the forest practically ceases and a dense growth of dwarf spruce begins. The trees are from two to six feet high and have their branches so matted and interlaced, that one is forced to walk over them if they are low, or to crawl under them if they are high, for it is impossible to force a way through.

Above the timber line this growth extends for a varying distance up the mountain enclosing rocky islands and promentories, where all of the common alpine plants are abundant.

The only birds found here are Juncos, Black-poll Warblers, and a few Yellow-rumped Warblers, Bicknell's Thrushes, and White-throated Sparrows; while on the bare lichen-covered rocks above nothing grows except the hardy alpine plants, shrubs, and grasses, and the common Junco is the only bird found, unless a solitary Black-poll Warbler or White-throated Sparrow has strayed up from the dwarf spruces below. From the timber line to the very top of the mountain the Junco continues in only slightly diminished numbers and for the last quarter of the road is usually the only bird seen.

The following birds are found from the base to the timber line and vary but little in abundance with an increase of altitude, if the surroundings are equally favorable: Ruffed Grouse (Yellow-bellied Flycatcher?), Blue Jay, Canada Jay, White-throated Sparrow, Purple Finch, Yellow-rumped Warbler, Bay-breasted Warbler, Blackburnian Warbler, Winter Wren, and Golden-crowned Kinglet.

1. **Actitis macularia**. SPOTTED SANDPIPER.—One was seen on July 8, 1886, in the Great Gulf on the West Branch of the Peabody River. It was only a short distance below our camp and at an altitude of about 3100 feet.

2. **Dendragapus canadensis**. CANADA GROUSE.—On July 3, 1886, one ran across the carriage road just in front of J. L. Goodale as he was walking up from the base of the mountain. Altitude about 3500 feet. No others seen.

3. **Bonasa umbellus**. RUFFED GROUSE.—Extends from the country at the base of the range to the tree limit. A female and brood of young found in the stunted birches near the Half-way House (altitude, 3840 feet) on July 26, 1884; and another brood was seen near the timber line on Mt. Adams on Sept. 2, 1884. Strange to say, none were seen by any of the party in 1886.

4. **Accipiter velox**, SHARP-SHINNED HAWK.—One was seen on July 24, 1884, sailing over the Half-way House.

5. **Accipiter cooperi**. COOPER'S HAWK.—On July 12, 1884, a pair were seen, and one of them shot, on the path from Tuckerman's Ravine to the carriage road up the mountain; and almost in the same spot another was seen on July 7, 1886. Altitude, 2640 feet.

6. **Falco columbarius**. PIGEON HAWK.—One was seen a little below our camp in the Great Gulf on July 8, 1886.

7. **Falco sparverius**. SPARROW HAWK.—On Sept. 2, 1884, two flew over the summit of Mt. Clay within a few feet of us as we sat there; and

the next day another came sailing down from above and disappeared in Tuckerman's Ravine, just as we began the descent.

8. **Pandion haliaëtus carolinensis.** AMERICAN OSPREY.—As we were descending the cone of Mt. Jefferson on Sept. 2, 1884, an Osprey flew slowly over a few yards above our heads. Altitude, approximately 5500 feet.

9. **Dryobates villosus.** HAIRY WOODPECKER.—One shot on July 11, 1884, about two miles by carriage road from the base of the mountain. Another was killed near the same place on July 26. 1884.

10. **Dryobates pubescens.** DOWNY WOODPECKER.—One killed almost at the base of the mountain on Aug. 12, 1884.

11. **Picoides americanus.** AMERICAN THREE-TOED WOODPECKER.—In August, 1884, an adult female and a young bird were shot below Hermit Lake, in Tuckerman's Ravine (altitude, 3960 feet). Another was seen but not killed at our camp in the Great Gulf on July 5, 1886.

12. **Ceophlœus pileatus.** PILEATED WOODPECKER.—This bird was not met with, but an old dead spruce full of its large and deep 'peck-holes' was found near our camp (altitude, 3140 feet). The holes were newly made and the chips and pieces of broken wood perfectly fresh.

13. **Chætura pelasgica.** CHIMNEY SWIFT.—On July 3, 1886, one was given to me that had been caught alive in an unused chimney of the Half-way House (altitude, 3840 feet). The men at the house had never before seen any bird like it, and during our stay we saw no more; still one or two pairs might have nested there and yet have escaped notice.

14. **Empidonax flaviventris.** YELLOW-BELLIED FLYCATCHER.—Three were seen in rather open forest nearly opposite the Half-way House in July, 1884. (Altitude, about 3800 feet.)

15. **Cyanocitta cristata.** BLUE JAY.—On July 26, 1884, a small flock was seen opposite the Half-way House (altitude, 3800 feet), and on July 11-12 others were seen farther down the Mountain. It probably breeds from the base to the timber line, but is far from plenty everywhere. None were seen in 1886.

16. **Perisoreus canadensis.** CANADA JAY.—Much more common than the Blue Jay, though nowhere plenty. Small flocks of half a dozen were seen on three or four occasions, but usually there was only one or at most two. We found them early in July from near the base of the mountain to the limit of the spruce and fir forest, a little above the Half-way House (altitude, 3850 feet). A short distance below it, at the limit of good sized spruce and fir trees, they were more plenty than anywhere else.

17. **Corvus americanus.** AMERICAN CROW.—Not seen in 1884, except about the base, where it was common. Two were seen at an altitude of 2650 feet, on July 7, 1886, near which it is not improbable that they breed; but two others seen on the bare rocks at an altitude of 5350 feet had evidently flown up from below.

18. **Pinicola enucleator.** PINE GROSBEAK.—Two specimens seen, both of them in the low spruce and fir timber opposite the Half-way House (altitude, 3800 feet). One was a fine adult male in full song, seen July 12, 1884; the other an immature bird, seen July 13, 1886.

19. **Carpodacus purpureus.** PURPLE FINCH.—Extremely abundant at the base of the mountain, and found in all but the thickest woods as high as the timber line.

20. **Loxia curvirostra minor.** AMERICAN CROSSBILL.—Not common, though small flocks were occasionally seen in 1886 near the timber line. I am told that in the country below (no one knows about the mountain itself) they are often entirely absent in summer, and in 1884 we failed to find them. They probably range through the whole of this region, however, though less abundant during the past summer than in some seasons.

21. **Spinus tristis.**—AMERICAN GOLDFINCH.—One was seen by J. L. Goodale on July 8, 1886. It was on the West Branch of the Peabody River at an altitude of about 3050 feet.

22. **Spinus pinus.** PINE SISKIN.—A few were heard in the woods near the Half-way House on July 12, and again on July 26, 1884; and one was seen in August of the same year near Hermit Lake (altitude, 4100 feet). Not found in 1886.

23. **Zonotrichia albicollis.** WHITE-THROATED SPARROW.—Extremely abundant at the base of the mountain, and very common at all altitudes up to the limit of shrubs, and on quiet days one was occasionally heard on the bare rocks above. The highest point at which it was noted was 5300 feet.

24. **Junco hyemalis.** SLATE-COLORED JUNCO.—Very common from the base to the bare rocky summits of the highest peaks. It occurs not only on the summit of Mt. Washington, where it can find plenty of food about the stables, but on the tops of Mt. Adams, Mt. Jefferson, and other peaks, where there are only bare lichen-covered boulders without even the hardy alpine plants found but a short distance below. In such places the Junco must breed, for early in July old birds were feeding newly fledged young with insects, of which they seemed to find large numbers. Two females shot on July 12 had ovaries nearly ready for a second clutch of eggs, and one was seen with its bill full of horse-hair.

25. **Melospiza fasciata.** SONG SPARROW.—Found a single specimen of this bird on the bare rocks at an altitude of 5340 feet on Mt. Washington. As this was early in the season (July 6, 1886), and there had been no storm for two weeks to carry it from its usual habitat to such a height, it may have nested somewhere near. It is abundant throughout the country at the base, but the above was the only one seen on the mountain itself.

26. **Ampelis cedrorum.** CEDAR WAX-WING.— Several flew over us near the fifth mile post of the carriage road on July 11, 1884. Others were heard opposite the Half-way House on July 26. Not seen in 1886.

27. **Vireo olivaceus.** RED-EYED VIREO.—Heard for the first mile or two of the carriage road, but was not common. A Vireo heard about a mile below Hermit Lake may have been *V. philadelphicus*, but I could not get near enough to shoot it.

28. **Helminthophila ruficapilla.** NASHVILLE WARBLER—On July 11, 1884, one was heard singing on the third mile by carriage road from the base, and another was seen on the bare mountain side on the fifth mile. Not positively identified in 1886.

29. **Helminthophila peregrina**. TENNESSEE WARBLER. — One found on Mt. Adams, at an altitude of 4000 feet, on Sept. 2, 1884.

30. **Dendroica cærulescens**. BLACK-THROATED BLUE WARBLER. — Not uncommon at the base, and as high as the second mile post of the carriage road. Was not found above this.

31. **Dendroica coronata**. YELLOW-RUMPED WARBLER. — Is common through the country at the base of the mountain, and specimens were seen at an altitude of 4240 feet in Tuckerman's Ravine on July 6, 1886.

It seems about equally plenty from the base to the tree limit, but the few found on the low matted spruces higher up may have been only stragglers in search of food.

32. **Dendroica castanea**. BAY-BREASTED WARBLER.—One was killed at our camp in the Great Gulf early in July, 1886, and two broods of young just out of the nest were found about two miles by carriage road from the base.

33. **Dendroica striata**. BLACK-POLL WARBLER.—Common about our camp in the Great Gulf (altitude, 3140 feet), but did not occur far below it. From the altitude of our camp as far as the shrubs extended it outnumbered the common Junco. It was very abundant through the shrubs and low matted spruces above the timber limit, but owing to lack of proper shelter did not extend higher. I saw a single specimen, at an altitude of 4800 feet, in some stunted birches (*Betula papyracea minor*) and dwarf willows (*Salix cutleri*).

Young birds were heard on July 10 apparently just out of the nest, but some young killed on July 26 had already begun to change into fall plumage. The males were in full song on July 26, but on August 11 both old and young birds had disappeared.

34. **Dendroica blackburniæ**. BLACKBURNIAN WARBLER.—Occurs at the base of the mountain; one was heard on July 11, above the second mile post of the carriage road, and another seen at 3800 feet altitude on July 8, 1886.

35. **Dendroica virens**. BLACK-THROATED GREEN WARBLER.—Common about the base, but soon becomes rare, and was not seen above 2590 feet.

[36. **Geothlypis agilis**, or **G. philadelphia**. On July 7, 1886, I saw a bird in a damp thicket, by the side of the carriage road, at an elevation of 2640 feet, that was undoubtedly either a Connecticut or a Mourning Warbler. In its slow, listless motions and peculiar way of flirting its tail, it reminded me most of the former as seen in Massachusetts in autumn, but the latter would seem to be far more likely to occur.]

37. **Sylvania canadensis**. CANADIAN WARBLER.—One was seen on the second mile, by carriage road, from the base of the mountain, on July 26, 1884.

38. **Troglodytes hiemalis**. WINTER WREN.—Common from base to timber limit, wherever it can find suitable damp mossy woods. The highest point at which it was seen was on the brook which runs from the Snow Arch in Tuckerman's Ravine. Altitude, 4100 feet.

39. **Certhia familiaris americana**. BROWN CREEPER.—Not common

anywhere. The lowest point at which it was seen on the mountain was 3140 feet, and the highest near the tree limit in Tuckerman's Ravine, at an elevation of 4100 feet.

40. **Sitta canadensis.** RED-BREASTED NUTHATCH.—Common at the base of the mountain, but more plenty at a higher altitude, and most abundant in the low spruce and fir forest near the limit of timber. Young birds in first plumage were killed on July 12, opposite the Half-way House. On September 2, 1884, I saw one running over the bare rocks on the summit of Mt. Clay.

41. **Parus atricapillus.** CHICKADEE.—Extends from the base to the limit of timber. None were seen in the dwarf spruces or low matted growth, and above 3000 feet it was less plenty than *P. hudsonicus*. The latter seems to replace it almost entirely in Tuckerman's Ravine above 4100 feet, and also around the Half-way House (3800 feet).

42. **Parus hudsonicus.** HUDSONIAN CHICKADEE.—The lowest point at which this bird was seen was a short distance below our camp in the Great Gulf (altitude, 3050 feet). It was rare there, however, and during our two weeks' stay we saw only five. About the Half-way House in Tuckerman's Ravine, and on the path from there to the carriage road, it was comparatively plenty, as low as 3300 feet, though nowhere an abundant bird. On September 2, 1884, a small flock was seen in the 'saddle' between Mt. Jefferson and Mt. Adams, though the dwarf spruces were not over two feet high.

43. **Regulus satrapa.** GOLDEN-CROWNED KINGLET.—Common from base to tree limit. None seen above the timber line, and everywhere equally plenty.

44. **Turdus aliciæ bicknelli.** BICKNELL'S THRUSH.—Found from an altitude of 3000 feet to the limit of stunted spruces about four feet high, 4340 feet in Tuckerman's Ravine being the highest point at which it was noted. In the neighborhood of our camp in the Great Gulf (3140 feet) it was less plenty than *T. ustulatus swainsonii*, though not to any great extent; but at 4100 feet in Tuckerman's Ravine it outnumbered it nearly three to one. Bicknell's Thrush was most abundant, however, in the woods opposite the Half-way House and for about half a mile below it. A young bird in full first plumage was taken on July 12, 1884.

45. **Turdus ustulatus swainsonii.** OLIVE-BACKED THRUSH. Occurs throughout the country at the base of the mountain, but is there outnumbered by *T. aonalaschkæ pallasii;* the latter soon becomes rare as a higher altitude is reached, but its place is then taken by *T. aliciæ bicknelli;* there is, however, an intermediate tract where *T. u. swainsonii* is the most abundant of the Thrushes. In short, Swainson's is the only Thrush that extends uninterruptedly from base to shrub limit, though in the highest part of its range it is less plenty than Bicknell's, and near the base not as common as the Hermit. In the intervale land along the river, *T. a. pallasii* takes the place held by *T. u. swainsonii*, and is there outnumbered by *T. fuscescens*. So that there are in all four distinct areas of distribution:

1. The intervale woods and thickets along the Androscoggin River, where *T. fuscescens* is abundant, *T. u. pallasii* less so.

2. From the low intervale lands nearly to the second mile of the carriage road *T. a. pallasii* outnumbers *T. u. swainsonii*.

3. From the last point to 3000 feet altitude *T. u. swainsonii* was the only one seen in any numbers.

4. From 3500 feet to the limit of stunted firs and spruces, *T. a. bicknelli* is the most abundant.

46. **Turdus aonalaschkæ pallasii.** HERMIT THRUSH.—Saw nothing of the bird except on the way up the mountain by the carriage road. It was common as far as the second mile post, but none were seen beyond with the exception of a single specimen seen at an elevation of 3300 feet.

47. **Merula migratoria.** AMERICAN ROBIN.—On July 12, 1886, a pair were seen at an altitude of 5080 feet on the Crawford Bridle Path. They may have been stragglers from the valley below, but as it was not during the migration, and there had been no storm for several weeks, it seems more likely that they had nested in some stunted firs and spruces on a southern slope near by. No others were seen.

THE BIRDS OF THE WEST INDIES, INCLUDING THE BAHAMA ISLANDS, THE GREATER AND THE LESSER ANTILLES, EXCEPTING THE ISLANDS OF TOBAGO AND TRINIDAD.

BY CHARLES B. CORY.

[*Continued from p.* 51.]

FAMILY COLUMBIDAE.

GENUS **Columba** LINN.

Columba LINNÆUS, Syst. Nat. 1735, and Syst. Nat. ed. 10, p. 162 (1758).

Columba leucocephala LINN.

Columba leucocephala LINN. Syst. Nat. I, p. 164 (1758).—NUTT. Man. Orn. I, p. 625 (1832).—GOSSE, Bds. Jam. p. 299 (1847).—SALLÉ, P. Z. S. 1857, p. 235.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 301.—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, pp. 585, 600.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 363 (1874).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).

—CORY, Bds. Bahama I. p. 137 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881); *ib.* Bds. Haiti & San Domingo, p. 134 (1885); *ib.* List Bds. W. I. p. 23 (1885).—COUES, Key N. Am. Bds. p. 565 (1884).

Patagiœnas leucocephalus REICH. Syst. Av. (1851).—BP. Consp. II, p. 54 (1854).—A. & E. NEWTON, Ibis, 1859, p. 253.

Patagiœnas leucocephala REICH. Syst. Nat. p. 25 (1851).—BP. Consp. II, p. 54 (1854).—CAB. J. f. O. 1856, p. 107.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—*ib.* GUNDL. 1874, p. 288; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 345 (1878).

SP. CHAR. *Male:*—Above grayish blue, showing slight reflections; crown pure white, bordered at the nape by a band of dark purple, and below it a cape extending upon each side of the neck of metallic green, showing blue in some lights, the feathers bordered with black; quills dark brown, becoming lighter upon the secondaries; underparts grayish blue; crissum plumbeous; tail very dark brown.

The female resembles the male, but is somewhat paler.

Length, 12.50; wing, 7.25; tail, 2.25; tarsus, .80.

HABITAT. Bahamas and Antilles.

Columba corensis GMEL.

Columba corensis GMEL. Syst. Nat. I, p. 783 (1788).—SALLÉ, P. Z. S. 1857, p. 235.—A. & E. NEWTON, Ibis, 1859, p. 252.—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 377.—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 360 (1874).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—LISTER, Ibis, 1880, p. 42.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—CORY, Bds. Haiti & San Domingo, p. 136 (1885); *ib.* List Bds. W. I. p. 23 (1885).—WELLS, List Bds. Grenada, p. 6 (1886).

Columba portoricensis TEMM. Hist. Gen. Pigeons, I, pl. 15 (1813).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 172 (1840).

Columba monticolor VIEILL. Nouv. Dict. XXVI, p. 355 (1818).

Columba imbricata WAGL. Syst. Nat. No. 48 (1827).

Patagiœnas corensis BP. Consp. II, p. 54 (1854).—CAB. J. f. O. 1856, p. 108.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—GUNDL. Repert Fisico-Nat. Cuba, I, p. 299 (1866); *ib.* J. f. O. 1874, p. 289; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 344 (1878).

SP. CHAR. *Male:*—General plumage slaty; top of head, throat and breast pale purple; a broad cape extending from the sides of the neck, over the upper back, of beautifully rounded feathers, showing bright, metallic purple when held in the light, each feather narrowly edged with dark brown at the base of the skull.

The sexes are similar, the female being slightly paler.

Length, 13.50; wing, 7.50; tail, 5.50; tarsus, 1.

HABITAT. Antilles.

Columba caribæa LINN.

Columba caribæa LINN. Syst. Nat. I (1766).—GMEL. Syst. Nat. I, p. 773 (1788).—LATH. Ind. Orn. p. 603 (1790).—TEMM. Hist. Gen. Pigeons, 450 (1813-15).—SHAW, Gen. Zool. XI, p. 37 (1819).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 359 (1874).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, List Bds. W. I. p. 23 (1885).

Columba caribbæa DENNY, P. Z. S. 1847, p. 39.

Columba caribbea GOSSE, Bds. Jam. p. 291 (1847).

Patagiœnas caribæa BP. Consp. II, p. 54 (1854).—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—REICH. Handb. p. 65, tab. 230.—GRAY, Handl. Bds. II, p. 234 (1870).

Columba carribea MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 301.

SP. CHAR. *Male:*—Forehead and cheeks showing a faint olive, the rest of the head a dull purplish tinge; chin dull white; feathers of the nape and upper back showing golden green reflections when held in the light; rest of upper parts dull olive; breast showing a dull purplish tinge; rest of underparts pale reddish brown; upper surface of tail dark slaty brown, almost black, to within two inches of the tip, which is very pale brown; upper tail-coverts nearly covering the dark brown of the basal portion; under surface of tail dull white; primaries dark brown, narrowly edged with white on the outer webs, showing brightest on the second, third, and fourth feathers.

The sexes are similar.

Length (skin), 14; wing, 8.50; tail, 6; tarsus, .90.

HABITAT. Jamaica and Porto Rico.

Columba inornata VIG.

Columba inornata VIG. Zool. Journ. 1827, p. 446.—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 173 (1840).—DENNY, P. Z. S. 1847, p. 39.—SCL. P. Z. S. 1861, p. 80.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 301.—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 360 (1874).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Haiti & San Domingo, p. 136 (1885); *ib.* List Bds. W. I. p. 23 (1885).

Columba rufina GOSSE, Bds. Jam. p. 296 (1847).

Chlorænas inornata BP. Consp. II, p. 53 (1854).—CAB. J. f. O. 1856, p. 106.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCLATER, P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—

GUNDL. Repert. Fisico-Nat. Cuba, I, p. 298 (1866); *ib.* J. f. O. 1874, pp. 286, 312; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 343 (1878).

SP. CHAR. *Male*:—Head, neck, underparts, and some of the wing-coverts dull purple; rest of plumage slaty; edges of outer webs of some of the wing-coverts white, distinctly marking the wings; chin dull white.

The sexes are similar.

Length, 14.50; wing, 8.50; tail, 5.50; tarsus, 1.10.

HABITAT. Greater Antilles.

GENUS **Engyptila** SUNDEV.

Engyptila SUNDEVALL, Stockholm Acad. Handl. 1835.

Engyptila jamaicensis (LINN.).

Columba jamaicensis LINN. Syst. Nat. I, p. 283 (1766).—GMEL. Syst. Nat. I, p. 782 (1788).—TEMM. Hist. Gen. Pigeons, p. 495 (1813-15).

Columba frontalis TEMM. Hist. Gen. Pigeons (1813-15).

Goura jamaicensis SHAW, Gen. Zool. XI, p. 126 (1819).

Peristera jamaicensis GOSSE, Bds. Jam. p. 313 (1847).—ALBRECHT, J. f. O. 1862, p. 204.

Leptoptila jamaicensis SLOANE, Jam. pl. 262.—BP. Icon. Pig. t. 119; *ib.* Consp. II, p. 73 (1864).—MARCH. Pr. Acad. Nat. Sci. Phila. 1863, p. 302.—GRAY, Handl. Bds. II. p. 242 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 133 (1873).

Engyptila jamaicensis A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, List Bds. W. I. p. 23 (1885).

SP. CHAR. *Male*:—Forehead dull white, shading into slaty gray on the top of the head; a cape of metallic purple, blue and gray, when held in the light; rest of upper surface olive; throat dull white, becoming slaty on the underparts; flanks and belly dull white; under surface of wings bright rufous; tail feathers slaty, tipped with white, except the two central ones, which are pale brown; primaries pale brown.

Length (skin), 10; wing, 6; tail, 4.25; tarsus, 1; bill .75.

HABITAT. Jamaica.

Engyptila wellsi LAWR.

Engyptila wellsi LAWR. Auk, I. No 2, p. 180 (1884).—CORY, List Bds. W. I. p. 23 (1885); *ib.* Revised List (1886).—WELLS, List Bds. Grenada, p. 7 (1886).

SP. CHAR. *Female*:—"The front is whitish, with a slight tinge of fawn color on the anterior portion, and is of a bluish cast on the posterior;

the crown and occiput are dark brown; the hind neck is of a rather lighter brown; the back, wings, and upper tail-coverts are of a dull olivaceous green; the first outer tail-feather is brownish-black, narrowly tipped with white; the second is dark brown for two-thirds its length, terminating in blackish; all the other tail-feathers are dark umber brown above, and black underneath; the chin is white; the neck in front and the upper part of the breast are of a reddish fawn color; the middle and lower parts of the breast and the abdomen are creamy white; the sides are of a light fulvous color; the under tail-coverts are white, tinged with fulvous; the quills have their outer webs of a clear warm brown; the inner webs and under wing-coverts are of a rather light cinnamon color; the bill is black; the tarsi and toes are bright carmine red.

"Mr. Wells says the sexes are alike.

"Length, 12.25 inches; wing, 6.00; tail, 4.00; bill, .63; tarsus, 1.25." (LAWR., l. c., orig. discr.)

HABITAT. Grenada.

Engyptila collaris CORY.

Engyptila collaris CORY, Auk, III, pp. 498, 502 (1886).

SP. CHAR.—Forehead dull white; top of the head dark gray, showing a metallic tinge of purple on the nape; a cape of metallic purple showing greenish red reflections where it joins the back; back dark brownish olive; throat dull white; breast dull vinaceous, shading into dull white on the belly; sides dull red brown; under wing-coverts and under surface of wing rufous brown; primaries brown, having the inner webs heavily marked with rufous brown; tail slaty brown, two or three outer feathers tipped with white; feet red; bill black; iris dull white.

Length, 9.50; wing, 5.75; tail, 3.50; tarsus, 1.25; bill, .75.

HABITAT. Grand Cayman.

GENUS Zenaidura BONAP.

Zenaidura "BONAPARTE, Consp. II, 1854, p. 84."

Zenaidura macroura (LINN.).

Columba macroura LINN. S. N. ed. 10. p. 164 (1758), part.

Columba carolinensis LINN. Syst. Nat. I, p. 286 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 176 (1840).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601 (Porto Rico).

Zenaidura carolinensis SALLÉ, P. Z. S. 1857, p. 235 (San Domingo).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 129 (1885); *ib.* List Bds. W. I. p. 23 (1885).

Perissura carolinensis BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860)

(Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 301 (1865); *ib.* J. f. O. 1874, p. 298 (Cuba).

Columba (*Zenadura*) *carolinensis* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1867) (San Domingo).

Recorded from Haiti, San Domingo, Cuba, and Porto Rico.

GENUS **Ectopistes** SWAINS.

Ectopistes SWAINSON, Zool. Jour. III, p. 362, 1827.

Ectopistes migratorius (LINN.).

Columba migratoria LINN. Syst. Nat. I, p. 285 (1766).

Ectopistes migratoria SWAINS. Zool. Journ. III, p. 362 (1827).—GUNDL. J. f. O. 1856, p. 112 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 302 (1865); *ib.* J. f. O. 1874, p. 300 (Cuba).—CORY, List Bds. W. I. p. 24 (1885).

Accidental in Cuba.

GENUS **Zenaida** BONAP.

Zenaida BONAPARTE, Geog. and Comp. List. p. 41, 1838.

Zenaida zenaida (BONAP.).

Columba zenaida BP. Journ. Acad. Nat. Sci. Phila. V, p. 30 (1825).—WAGL. Isis, 1829, p. 744.—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 177 (1840).—AUD. Bds. Am. V, p. 1 (1842).—BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 257 (1866).

Zenaida amabilis BP. List, 1838; *ib.* Consp. II, p. 82 (1854).—GOSSE, Bds. Jam. p. 307 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859).—A. & E. NEWTON, Ibis, 1859, p. 253.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859).—A. & E. NEWTON, Ibis, 1859, p. 253.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378.—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302.—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 301 (1865); *ib.* J. f. O. 1874, pp. 298, 312; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 346 (1878).—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Bahama I. p. 138 (1880); *ib.* Bds. Haiti & San Domingo, p. 128 (1885); *ib.* List Bds. W. I. p. 24 (1885).—COUES, Key N. Am. Bds. p. 569 (1884).

SP. CHAR. *Male*:—Above olive brown; top of the head and underparts pale purplish brown; sides of the body and under wing-coverts bluish; tail-feathers, with the exception of the central ones, bluish,

with a black band about an inch from the tip; a slight streak of metallic blue below the ear; quills dark brown; secondaries tipped with white; feet red.

The sexes are similar.

Length, 10; wing, 6; tail, 4.30; tarsus, 80; bill, .55.

HABITAT. Antilles.

Zenaida spadicea CORY.

Zenaida spadicea CORY, Auk, III, pp. 498, 502 (1886).

SP. CHAR.—General upper plumage dark olive brown, rufous brown on the forehead and showing a tinge of very dull purple on the crown, apparently wanting in some specimens; a sub-auricular spot of dark metallic blue; sides of the neck and nape rich metallic purple; chin pale buff, shading into rich rufous chestnut on the throat and breast; belly brown, showing a slight vinaceous tinge; upper surface of tail brown, the feathers showing a sub-terminal band of black, and all the feathers except the central ones tipped with gray; primaries dark brown, almost black, faintly tipped with dull white; the secondaries broadly tipped with white; under wing-coverts gray; bill black; feet red.

Length, 9.60; wing, 6; tail, 3.75; tarsus, .75; bill, .50.

HABITAT. Grand Cayman.

A specimen of *Zenaida* taken in Little Cayman differs somewhat from *Z. spadicea*, being lighter colored and having the metallic feathers of the neck somewhat differently colored—paler and less in extent. I have separated the Little Cayman bird provisionally and with much hesitation, and have proposed the name *Zenaida richardsoni* for it (see Auk, IV, p. 7, 1887), should further investigation prove them specifically separable.

Zenaida martinicana BONAP.

Zenaida martinicana, BP. Consp. II, p. 82 (1854).—TAYLOR, Ibis, 1864, p. 171.—GRAY, Handl. Bds. II, p. 241 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 132 (1873).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—LISTER, Ibis, 1880, p. 43.—GRISDALE, Ibis, 1882, p. 492.—CORY, List Bds. W. I. p. 24 (1885).—WELLS, List Bds. Grenada, p. 7 (1886).

Columba (*Zenaida*) *martinicana* SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 585.

SP. CHAR.—Top of head, cheeks, and upper throat pale rufous brown; narrow line of dark blue on the cheek; chin dull white; feathers of

the sides of the neck tipped with metallic purple; throat tinged with pale lavender; underparts dull bluish white; back olive brown, shading into chestnut brown on the rump; central tail-feathers brown; rest of tail-feathers slate color at the base, succeeded by a band of black, and tipped with white; quills dark brown, showing an indistinct white edging on the outer primaries, tipped with white; bill black.

Length, 10; wing, 6; tail, 4; tarsus, .75; bill, .50.

HABITAT. Lesser Antilles.

Zenaida rubripes LAWR.

Zenaida rubripes LAWR. Auk, II, p. 357 (1885).—CORY, Revised List Bds. W. I. p. 24 (1886).—WELLS, List Bds. Grenada, p. 7 (1886).

SP. CHAR. *Female*;—"The front is of a light brown tinged with vinaceous; the upper plumage is olivaceous-brown, with a dull reddish tinge, which is most observable on the back; the hind part and sides of the neck are grayish, the latter glossed with golden changing to light violet: the two central tail-feathers are olive brown; the outer web of the first lateral feather is pale rufous; the bases of the four outer ones are brownish-cinereous, with their ends largely pale rufous, the two colors separated by a black bar; the other tail-feathers are dark cinereous with a subterminal black bar, on the under side the color of the basal portion of the tail-feathers is blackish cinereous; the primaries are dark umber-brown, the secondaries brownish-black, both narrowly edged with white; the tertials are the color of the back, and are marked with four conspicuous oval spots of black; the under wing-coverts are light bluish-ash, the flanks dark ashy-blue; behind the eye is a small spot of black, and another below the ears; sides of the head and the chin pale vinaceous, the latter lighter in color; the under plumage is of a reddish cinnamon color, rather dull on the throat and breast, but somewhat brighter on the abdomen and under tail-coverts; bill black; tarsi and toes carmine red.

"The color of the feet in the dried specimen is quite bright; in the living bird it is doubtless much more so. The tail has fourteen rectrices.

"Length, fresh, 9.50 inches; wing, 5.25; tail, 3.38; bill, .62; tarsus, .75." (LAWR., l. c., orig. descr.)

HABITAT. Grenada.

GENUS **Melopelia** BONAP.

Melopelia BONAPARTE, Consp. II, p. 81, 1854.

Melopelia leucoptera (LINN.).

Columba leucoptera LINN. Syst. Nat. I, p. 164 (1758).
Turtur leucoptera GOSSE, Bds. Jam. p. 304 (1847).

Zenaida leucoptera SCL. P. Z. S. 1861 p. 80, (Jamaica).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).

Melopelia leucoptera MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 301 (1866); *ib.* J. f. O. 1874, p. 297 (Cuba).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Haiti & San Domingo, p. 131 (1885); *ib.* List Bds. W. I. p. 24 (1885).

This species has been recorded from Cuba, Jamaica, and San Domingo.

GENUS **Columbigallina** BOIE.

Columbigallina BOIE, Isis, 1826, p. 977.

Columbigallina passerina (LINN.).

Columba passerina LINN. Syst. Nat. I, p. 285 (1766).—GMEL. Syst. Nat. I, p. 787 (1788).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 179 (1840).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, pp. 586, 601.

Columbigallina passerina ZELEDON, Pr. U. S. Nat. Mus. VIII, p. 112 (1885).—CORY, Ibis, 1886, pp. 472, 474; *ib.* Auk, III, p. 502 (1886).

"*Columba* (*Goura*) *passerina* BP. Obs. Wils. 1825, No. 181.—NUTT. Man. I, p. 635 (1832)."

"*Chæmepelia passerina* SWAINS. Zool. Journ. III, p. 358 (1827)."

Chamæpelia passerina BP. List, 1838, p. 41.—GOSSE, Bds. Jam. p. 311 (1847).—SALLÉ, P. Z. S. 1857, p. 236.—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859); *ib.* XI, p. 96 (1866).—WELLS, List Bds. Grenada, p. 7 (1886).—BREWER, *ib.* VII, p. 307 (1860).—SCL. P. Z. S. 1861, p. 80; *ib.* 1874, p. 175.—ALBRECHT, J. f. O. 1862, p. 204.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302.—SCL. & SALV. Nom. Avium Neotr. p. 133 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 389 (1874).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 349 (1878).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—LISTER, Ibis, 1880, p. 43.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—A. & E. NEWTON, Handb. Jaimaca, p. 114 (1881).—CORY, Bds. Bahama I. p. 139 (1880); *ib.* Bull. Nutt. Orn. Club, VI, p. 154 (1881); *ib.* Bds. Haiti & San Domingo, p. 127 (1885); *ib.* List Bds. W. I. p. 24 (1885).—COUES, Key N. Am. Bds. p. 569 (1884).—RIDGW. Pr. U. S. Nat. Mus. VII, p. 172 (1884).

Chamæpelia trochila A. & E. NEWTON, Ibis, 1859, p. 253.—CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378.—SCL. P. Z. S. 1872, p. 653.

Columba (*Chamæpelia*) *passerina* BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 257 (1866).

Chamæpelia bahamensis MAYNARD, Am. Exch. & Mart, Jan. 15, 1887.

SP. CHAR. *Male:*—Above grayish olive, showing a bluish tinge upon the nape and crown; underparts reddish purple, becoming ashy on the

sides; under wing-coverts and quills showing reddish brown, the latter margined and tipped with dark brown; middle tail-feathers like the back, the others dark brown, two outer feathers tipped with white; upper surface of wing showing large spots of bluish purple; bill and feet yellowish, the former becoming dark at the tip.

The sexes are similar.

Length, 6.30; wing, 3.30; tail, 2.60; tarsus, .50; bill, .50.

HABITAT. Bahamas and Antilles.

GENUS **Geotrygon** GOSSE.

Geotrygon GOSSE, Bds. Jam. p. 316, 1847.

Geotrygon cristata (TEMM.).

Columba cristata TEMM. Hist. Gen. Pigeons, p. 449 (1813-15).—SHAW, Gen. Zool. XI, p. 40 (1819).

Geotrygon sylvatica GOSSE, Bds. Jam. p. 316 (1847).—ALRRECHT, J. f. O. 1862, p. 204.

Geotrygon cristata BP. Consp. II, p. 70 (1854).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 300.—GRAY, Handl. Bds. II, p. 243 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR. *Male:*—Forehead black, shading into grayish olive on the top of the head; a malar stripe of pale rufous; breast, sides of the neck, and upper back forming a broad collar of beautiful metallic purple; held in the light it shows bright golden green; back and wing-coverts dark purple, tinged with blue, showing chestnut in some lights; rump dark green; under surface of wings rufous brown; belly slate color; sides and flanks rufous brown; the first six primaries bright rufous, shading into green on the tips and inner webs; secondaries green; upper surface of tail green.

Length (skin), 11; wing, 6.75; tail, 4; tarsus, 1.05; bill, .90.

HABITAT. Jamaica.

Geotrygon mystacea (TEMM.).

Columba mystacea TEMM. Hist. Gen. Pigeons, p. 473 (1814-15).—SHAW, Gen. Zool. XI, p. 56 (1819).—"REICH. Syst. Av. t. 257, b. f. 3382."

Geotrygon mystacea BP. Consp. II, p. 71 (1854).—GRAY, Handl. Bds. II, p. 243 (1870).—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—SCL. P. Z. S. 1879, p. 765.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—CORY, List Bds. W. I. p. 24 (1885); *ib.* Ibis, 1886, p. 475.

SP. CHAR.—Forehead brownish, shading into green on the top of the head; sides of the neck and upper back bright metallic green, becoming bright purple with bluish reflections on reaching the back; stripe of white on the cheeks, passing from the lower mandible; rest of upper parts dark olive green; upper portion of throat dull white; becoming brown with greenish reflections on the breast; underparts dull purplish white, becoming dull white on the belly; under tail-coverts chestnut brown, tipped with white; primaries deep rufous chestnut, olive at tips; tail-feathers, except the two central ones, chestnut, shading to dull olive at the tip.

Length, 11; wing, 6.50; tail, 5; tarsus, 1.25; bill, .70.

HABITAT. Guadeloupe, Santa Lucia, and Grand Terre.

Geotrygon caniceps GUNDL.

Columba caniceps GUNDL. Journ. Bost. Soc. Nat. Hist. VI, p. 315 (1852).

Geotrygon caniceps GUNDL. J. f. O. 1856, p. 110.—BREWER. Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 300 (1866); *ib.* J. f. O. 1874, p. 295.—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR. *Male:*—Forehead whitish, shading into slate color on the top of the head; the feathers of the nape showing greenish and purple reflections when held in the light; back purple; rump steel blue, showing greenish reflections in the light; throat pale, becoming slaty on the breast, with slight reflections in the light; underparts pale slate color, showing rufous on the abdomen, and deep rufous brown on the crissum; under surface of wing reddish brown; primaries olive brown, showing rufous brown on the inner webs.

The sexes are similar.

Length (skin), 10.50; wing, 6; tail, 3.50; tarsus, 1.20.

HABITAT. Cuba.

Geotrygon montana (LINN.).

Columba montana LINN. Syst. Nat. I, p. 281 (1766).—GMEL. Syst. Nat. I, p. 772 (1788).—SUNDEV. Oefv. K. Vet. Akad. För. 1869, p. 601.

Peristera montana GRAY. Gen. Bds. II, p. 475 (1844-49).

Geotrygon montana GOSSE, Bds. Jam. p. 320 (1847).—BP. Consp. II, p. 72 (1854).—CAB. J. f. O. 1856, p. 109.—SALLÉ, P. Z. S. 1857, p. 235.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCL. P. Z. S. 1861, p. 80.—ALBRECHT, J. f. O. 1862, p. 204.—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 300.—TAYLOR, Ibis, 1864, p. 171.—GUNDL. J. f. O. 1874, p. 294; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 348 (1878).—LAWR. Pr. U. S. Nat. Mus. I, p. 487 (1878).—LISTER, Ibis, 1880, p. 43.—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 114 (1881).—CORY, Bds. Haiti & San

Domingo, p. 132 (1885); *ib.* List Bds. W. I. p. 24 (1885); *ib.* Ibis, 1886, p. 473.—WELLS, List Bds. Grenada, p. 7 (1886).

Columba (*Geotrygon*) *montana* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866); *ib.* X, p. 257 (1866).

SP. CHAR. *Male:*—Above purplish brown, becoming light brown on the wings; throat dull white, becoming pale purple on the breast; belly pale brown, becoming brownish white on the under tail-coverts.

Female:—Upper parts greenish brown; forehead light brown, the color extending upon the cheeks and sides of the head; breast chestnut brown.

Length, 9.25; wing, 6; tail, 3.25; tarsus, 1.

HABITAT. Antilles.

Geotrygon martinica (GMEL.).

Columba martinica GMEL. Syst. Nat. I, p. 781 (1788).

Columba montana AUD. Orn. Biog. II, p. 382 (1834).—NUTT. Man. I, 2nd ed. p. 756 (1840) (not of LINN.).

Zenaida montana BP. Geog. & Comp. List, 1838.

Oreopeleia martinicana REICH. Syst. Nat. Av. p. 25 (1851).

Geotrygon martinica BP. Consp. II. p. 74 (1854).—CAB. J. f. O. 1856, p. 108.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 134 (1873).—GUNDL. J. f. O. 1874. p. 293; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 347 (1878).—CORY, Bds. Bahama I. p. 141 (1880); *ib.* Bds. Haiti & San Domingo, p. 133 (1885); *ib.* List Bds. W. I. p. 24 (1885).—COUES, Key N. Am. Bds. p. 571 (1884).

Oreopeleia martinica BAIRD, Bds. N. Am. p. 607 (1858).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 299 (1866).—GRAY, Handl. Bds. II, p. 242 (1870).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 393 (1874).

Columba (*Geotrygon*) *martinica* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 96 (1866).

SP. CHAR. *Male:*—Above chestnut rufous; crown and neck with metallic reflections of green and purple; back showing brilliant purple reflections, becoming less distinct on the rump; a band of white from the base of the lower mandible, under the eye, to the side of the neck, bordered below by a streak of dull purple; underparts showing the breast pale purple, becoming dull white on the throat and abdomen; primaries bright rufous, becoming darker at the tips; tail rufous; legs light red; bill red, tip horn color; iris light brown.

The sexes appear to be similar.

Length, 10.75; wing, 6; tail 4.25; tarsus, 1.05; bill, .90.

HABITAT. Bahamas and Antilles.

GENUS **Starnœnas** BONAP.

Starnœnas BONAPARTE, Geog. & Comp. List, 41, 1838.

Starnœnas cyanocephala (LINN.).

Columba cyanocephala LINN. Syst. Nat. I, p. 282 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 174 (1840).

Starnœnas cyanocephala GOSSE, Bds. Jam. p. 324 (1847).—CAB. J. f. O. 1856, p. 108 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 307 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 299 (1865): *ib.* J. f. O. 1874, p. 291 (Cuba).—CORY, List Bds. W. I. p. 24 (1885).

SP. CHAR.—Top of the head bright blue; a narrow line of black extending through the eye, meeting at the nape, immediately joining a band of white which passes under the eye from the lower mandible and chin; throat glossy black, narrowly banded with white on the last black feathers of the lower throat, forming a white edging to the black throat; the feathers on the sides of the neck narrowly tipped with blue; upper parts purplish brown on the back, shading into olive brown on the lower back and rump; wings and tail brown; breast tinged with purple, shading into rufous brown on the belly; under surface of tail-feathers dark brown, almost black; basal portion of bill and feet deep red.

Length, 11; wing, 6; tail, 4; tarsus, 1.25; bill, .50.

Cuba, common in parts of the interior. On several occasions I have seen the living birds offered for sale in the markets of Havana. Jamaica (*Albrecht*).

Turtur risoria of authors is claimed to have been introduced into the West Indies many years ago; I have a specimen in my cabinet labelled "San Domingo." It has also been recorded from St. Bartholomew, Cuba, and Jamaica.*

ADDITIONAL NOTES ON THE BIRDS OF PUEBLO COUNTY, COLORADO.

BY CHARLES WICKLIFFE BECKHAM.

DURING the year 1883 I spent several months at Pueblo, Colorado, and devoted considerable time while there to the birds. The results of my observations, nearly all of which were made in

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* *Turtur risoria* SUNDEV. Oefv. K. Vet. Acad. För. 1869, p. 586 (St. Bartholomew).
Turtur risorius MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 302 (Jamaica).
Turtur risorus A. & E. NEWTON, Handb. Jamaica, p. 117 (1881).

the spring, were published in this journal (Vol. II, 1883, pp. 139-144), where are given brief notes on ninety-one species.

In the fall of 1886 I spent a month at the same place, from October 4 to November 4, and all of the thirty-one days but four were spent in the field. The result of this activity is the addition of twenty-two species and subspecies to the avi-fauna, and some interesting notes on birds enumerated in the previous list.

At the time of my arrival most of the transients and summer residents had left for the South, and a good many presumable winter residents had put in their appearance.

The weather during the whole of my stay was typical of the usual Colorado autumn; that is, the next thing to perfection—cloudless skies, cool nights, and warm days, with now and then a dust storm, thrown in doubtless for the purpose of stimulating our appreciation of the good things we had been enjoying in the meteorological line, and preventing us from growing tired of them.

The birds apparently did not like these cold dust storms any better than the unfeathered bipeds, for during their prevalence, it seemed impossible to find one anywhere; the most favored avian haunts were entirely deserted, and no amount of 'beating about the bush' would bring forth even a chirp.

I experienced the usual number of disappointments and surprises, which about balanced each other; I did not find some species that I expected to meet with, and found others which were not expected. Belonging to the former class may be mentioned *Zenaidura macroura* and *Melanerpes erythrocephalus*, both of which were excessively abundant there in the spring of 1883. The latter species, however, is notably inconstant in this respect; its movements being doubtless regulated by the food supply.

Additions to the List given in 'The Auk,' Vol. II, 1883, pp. 139-144.

92. **Gallinago delicata.** But one seen. Flushed from a marsh, October 29.

93. **Circus hudsonius.** Two of these Hawks were seen on October 11. They approached within a very short distance of me and were easily recognized.

94. **Dryobates villosus harrisi.** None were seen in 1883, but in 1886 I found it to be the most abundant Woodpecker about Pueblo, and very tame and unsuspicious; in marked contrast with my experience of *D. vil-*

losus in the East. I had no difficulty in shooting them with a .22-calibre cane gun.

95. **Tyrannus vociferans**. Upon looking over my skins taken at Pueblo in the spring of 1883, I find several representatives of this species which I had then erroneously referred to *T. verticalis*. As I collected three skins of each bird, it is probable that they were equally abundant there at that time.

96. **Ammodramus sandwichensis alaudinus**. One individual of this subspecies was captured October 8, in a field covered with a dense growth of frost-killed *Helianthus*. The coloring is unusually brown for *alaudinus*. Several more were seen on that day, but none before or afterwards.

97. **Zonotrichia querula**. On October 29 I shot a male of this species in the autumnal plumage of the young bird. It was in company with a lot of Juncos and Tree Sparrows. No others were seen. This, I believe, considerably extends the known range of Harris's Sparrow, as I can find no 'record' west of Kansas or Nebraska.

98. **Zonotrichia albicollis**. A male in fine plumage of this essentially Eastern Province bird, was captured on October 24. The specimen is unusually small. Excepting a skin in the National Museum from Oregon, this is believed to be the most western record for the White-throated Sparrow. Perhaps both were mere stragglers. Colonel Goss (Birds Kan., 1886, p. 43) says it is "common" in Kansas, but the note doubtless has reference to the eastern part of the State.

99. **Spizella monticola ochracea**. First detected on October 20, after which date they became very abundant. The males were singing a good deal in low and weak, disconnected tones, peculiar to many young Sparrows which begin 'practising' in the fall. In November I heard *S. monticola* singing in the same way in Kentucky, and observed that the notes of the two birds were precisely alike.

100. **Junco aikeni**. Quite common. Generally in flocks with other Juncos, but upon one occasion I found a flock of ten or twelve which seemed to be composed entirely of *aikeni*. Decidedly one of the shyest birds I ever met with. Whenever I came in sight they all seemed to realize at once that their skins were wanted, judging from the celerity with which they took themselves away. Otherwise their habits seemed to be similar to those of other Juncos. The skins collected show a great deal of variation in the intensity of the slate color, and in the amount of white on the wings.

101. **Junco hyemalis**. Four or five of these birds were collected, and many more were seen. One of them was submitted to Mr. Ridgway for examination, who writes: "No. 2510 is *J. hyemalis* of the type which Dr. Coues proposed to call *J. hyemalis connectens*, and which Mr. Brewster thinks shows intergradation with *J. oregonus*, but which I cannot satisfactorily distinguish from the Eastern bird." Out here the bird itself seemed to share the uncertainty of the ornithologists as to its taxonomic status, for I invariably found it associated with *oregonus*, *annectens*, or

aikeni, apparently not having faith enough in its right to specific rank to go off and 'flock by itself.'

102. **Junco annectens.** Next to *Junco hyemalis oregonus*, this was the most common Junco I met with. I secured a large series, which exhibits considerable variation in size and coloration.

103. **Pipilo fuscus mesoleucus.** Although not observed at all in 1883, I found them quite common here in October, 1886, in suitable stony places. One was shot within the city limits, and I saw another in the yard of a hotel, but they prefer the rocky *arroyos* that are to be found along the Arkansas River and other streams. At a quarrymen's camp, eleven miles west of Pueblo, they were particularly abundant, and so tame that they came and went about the shanties with as much fearlessness as domestic fowls. Their alarm or call-note seemed to me very much like that of the Song Sparrow. All of those collected were very difficult to preserve in good form on account of the loose way in which the feathers were attached to the skin.

104. **Petrochelidon lunifrons.** The bird itself was not observed, but a 'colony' of their nests was seen attached to some limestone cliffs near the same camp above referred to.

105. **Lanius ludovicianus excubitorides.** Through an oversight this bird was not mentioned in any former paper. It was rather common in the spring of 1883, but during my last visit only two were seen.

106. **Helminthophila celata.** But one specimen of this Warbler was obtained. It was shot October 8, out of a party of three or four which were flitting about the top of a large cottonwood just within the city limits. It was a 'bird of the year,' with the orange crown showing quite distinctly. No others were observed.

107. **Sylvania pusilla pileolata.** Two of these birds were taken; one on October 5, in a clump of willows, and another on the 20th, in the same place. I was much surprised to find the Black-cap here as late as the 20th; for we had had several severe frosts prior to that date, enough to have totally destroyed the food of this insect-eating species. It was in fine plumage, and there was no external indication that it had been incapacitated for migration by wounds, moult, etc.

108. **Salpinctes obsoletus.** First seen October 6 in some rocky *arroyos*, eight or ten miles from Pueblo, where one was collected and six or eight more were seen. I again saw one at the same place on October 27. One of the shyest birds I have ever met with.

109. **Certhia familiaris americana.** One was captured and another seen on October 24.

110. **Parus atricapillus septentrionalis.** This Chickadee was encountered but twice; on October 12, when two were shot out of a flock of eight or ten *P. gambeli*, with which they seemed to be on the best of terms, and again on November 2, when three were found together in a thicket. The note is rather faint, and not much like that of the eastern bird.

111. **Regulus calendula.** Observed upon two or three occasions. Two were shot, a male and a female, both 'birds of the year,' and the former, as

I expected (see Pr. U. S. Nat. Mus. 1885, pp. 625-628), had a fully developed red crown-patch.

112. **Turdus aonalaschkæ auduboni.** Three representatives of this species were collected, October 5, 6, and 15. No others were seen.

Additional Notes on Species mentioned in the former paper.

Rallus virginianus. Only one individual seen—in a marsh, November 3.

Ægialitis vocifera. Rather uncommon,

Falco sparverius. But three or four were seen.

Colaptes cafer. Common.

Dryobates pubescens gairdneri. Not common.

Otocoris alpestris arenicola. Very abundant. In my former paper on the birds of Pueblo, the Shore Lark found here was provisionally referred to the form *leucolæma*, but upon a re-examination of the skins collected, the bird turns out to be *arenicola*.

Pica pica hudsonica. Abundant.

Cyanocitta stelleri macrolopha. A single individual was seen on October 6. They were reported to be very abundant at this time in the Green horn Mountains, thirty miles from Pueblo.

Agelaius phœniceus. Common up to the date of my departure.

Sturnella neglecta. Only four or five of these birds were noted during my stay.

Icterus bullocki. On October 24, long after the time when nearly all of the summer residents had migrated, I shot one of these birds in a dense thicket of willow bushes. It was a young female in very dark, soiled plumage, and quite immature, but apparently able to fly very well. It was in company with another which I failed to secure.

Scolecophagus cyanocephalus. Ten or a dozen seen about a slaughter house near town.

Carpodacus frontalis. Not as abundant as in 1883.

Spinus tristis. Very abundant.

Spinus psaltria. Abundant. Generally seen in pairs. All of those I shot were young birds, and several of the males had almost attained the full 'spring plumage.'

Spinus pinus. Not seen until October 31, when several small flocks were observed.

Zonotrichia intermedia. Exceedingly abundant. Barely one-fourth of the males collected had attained the white crown; all of them, both males and females, were birds of the year. They sang a good deal in that sputtering sort of a way familiar to all who have studied the habits of *Z. albicollis* and other Sparrows in the fall. This 'practising' song proceeds, I am sure, from young birds just beginning to exercise their vocal powers, and is doubtless quite disconnected with any sexual excitation. The call-note of this Sparrow is very similar to that of *Z. albicollis*.

Spizella socialis arizonæ. Common in small flocks during the first half of the month; but few were seen towards the last.

Junco hyemalis oregonus. Rather common.

Melospiza fasciata montanus. Not very common.

Melospiza lincolni. In the same places as the last, and about equally numerous during first part of the month.

Pipilo maculatus arcticus. Not common.

Dendroica auduboni. About a dozen individuals altogether were seen, and one was captured as late as October 24.

Parus gambeli. Abundant during the whole time of my stay. Exceedingly tame and, like other Paridæ, partially gregarious. Not seen at all at Pueblo in 1883.

Myadestes townsendi. But one was seen—October 31. The bird was common here in the spring of 1883.

Turdus ustulatus swainsoni. On October 30, I shot a belated Olive-backed Thrush in a willow thicket. It was very emaciated, one leg had been broken, and but one feather was left to 'adorn' its tail—or, perhaps, 'point a moral.' Its presence here at this date is thus easily accounted for.

Merula migratoria propinqua. I saw but four or five individuals during my stay.

Sialia arctica. Rather uncommon. The only one shot was a young male with the blue feathers edged with brown.

Sialia mexicana. Observed only upon two or three occasions, when they appeared to be migrating; coming from the north and disappearing towards the south.

AUGUST BIRDS OF THE CHILHOWEE MOUNTAINS, TENNESSEE.

BY F. W. LANGDON.

THE observations herein recorded were made chiefly in Blount County, East Tennessee, between August 11 and 21, 1886, inclusive. The elevations known as the 'Chilhowee Mountains,' are a group of spurs or offshoots from the Great Smoky Range of the East Tennessee and North Carolina border; and extend, nearly at right angles to the 'Smokies,' as a series of more or less parallel ridges, 1500 to 4000 feet in height, for fifteen or twenty miles in a general northwesterly direction. There are three main ranges answering the above description and these are limited or cut off, so to speak, at their northwestern extremities, by the Chilhowee range proper (called on some maps Chilhowee

'Mountain'). This latter range, about twenty miles in length, and nearly parallel with the 'Smokies,' is pierced (about twenty-five miles south-east of Knoxville) by Little River. A mile west of the 'gap' so formed is Mount Nebo, one of the sub-divisions of the Chilhowee range, and an objective point of the expedition, where are located some chalybeate springs and a hotel. From this locality excursions were made in various directions, notably one to the Great Smoky Mountains, about twenty miles south-east.

The altitudes of the higher peaks of the region range from 2452 feet at Nebo, to 6701—Clingman's Dome in the 'Smokies.'*

The whole Chilhowee group, including the principal range of that name, is situated in Blount and Sevier Counties, and is drained by the Little Pigeon, a tributary of the French Broad; and by Little and Little Tennessee Rivers, flowing into the Tennessee. The drainage of the entire region is thus eventually Ohioan.

The Chilhowee Mountains are not unknown to zoölogical science, Dr. James Lewis having described a species of land-shell, *Helix chilhoweensis*, from that region, about ten years ago.

The topography of the region is alternately mountain and 'cove'—as the little 'pockets' of tillable land, walled in by mountains except where they border the rivers, are called. Generally speaking a road following the river is the only outlet for these 'coves' that can be traversed by wagon.

The 'coves' passed through by the expedition were Miller's and Tuckaleechee,—said to be from six to eight miles in length and about a third as wide; Tuckaleechee being the larger of the two. Both are drained by Little River.

The entire mountain region is well wooded, and towards the 'Smokies' heavily timbered.

At Mt. Nebo the principal trees are poplar, oak, chestnut, chinquapin, hickory, beech, sweet and black gums; a few walnut, butternut, and birch; with a sprinkling of pines throughout and of small spruce along ravines and small streams. The undergrowth is chiefly of poplars, gums, dogwood, chinquapin, and,

* *Vide* Guyot, in Am. Jour. Sci. and Arts., 2nd ser., Vol. XXIV, p. 277; and Safford, 'Geology of Tennessee,' Nashville, 1869.

occasionally along streams, witch-hazel; in many places the 'mountain laurel' forms impenetrable thickets for miles.

'Pine Mountain,' adjoining Nebo on the east, and separated from it only by a shallow ravine, is clothed on its upper two-thirds with a mantle almost exclusively of pine, while its basal third corresponds closely with Nebo.

The foot-hills surrounding Nebo are mostly cleared of timber and under cultivation, corn, wheat and sorghum being the principal crops, with some cotton and tobacco. This is the case also in the 'coves' traversed on the way to the 'Smokies.' As the 'coves' are left behind, however, and the Great Smoky Range is approached the scenery becomes bolder in character, the route lying over mountainous ridges and the horizon shut in on all sides by range after range of mountains from three to six thousand feet in height. Along Little River the scenery in many places might fairly be called grand.

Night overtakes us on Scott Mountain at the home of Mr. A. J. Dorsey and his estimable family, whose hospitalities much enhance the enjoyment of the trip. Here we leave our team, and another day finds our party, ten in number, on foot for the 'Smokies,' seven miles distant, loaded down with guns, ornithological material, fishing tackle, photographic apparatus, cooking utensils, and provisions. Our headquarters on Defeat Mountain, a spur of the Smoky Range, was at a cattle-herder's camp, a small log cabin, situated at an altitude of perhaps 4000 feet, in the heart of a giant spruce and poplar forest; many trees of both species measuring six feet in diameter and fifty feet or more to a limb. Here, on a gentle slope covered with a velvety carpet of moss, partridge-berry vine, and spruce needles, we were lulled to rest by the babbling of the waters over the rocky bed of a neighboring trout brook (middle fork of Little River); this, with the *hoot-to-toot* of the Great Horned Owl and the notes of a full orchestra of katydids, furnished a symphony eminently appropriate to its surroundings. The 'patter of the rain on the roof,' however, which ensued later, was a musical event not so highly appreciated, since it necessitated the crowding of ten men into a cabin ten feet square.

As the sunbeams tip the crest of the 'Smokies' and struggle in splinters through the dark evergreen canopy about the camp, our ornithological eyes are greeted with the sight of such species

as the Hooded, the Worm-eating, Black-throated Blue, Cerulean, Blackburnian, Chestnut-sided, Black-throated Green, Black-and-white Creeping, and Canada Warblers (all taken within a few hours); whilst an occasional Pileated Woodpecker, or a party of Titmice or Blue Jays, add variety to the scene and sounds. Even the herpetologist might find food for contemplation in the huge rattlesnake with nine rattles and a button, killed by one of our photographic artists within a stone's throw of the camp; and the epicure sees food of a more substantial character in the speckled beauties supplied to our table from the neighboring stream.

Such localities as the one just described, at the junction of the poplar and spruce belts (altitude 4000 to 4500 feet) seemed a very paradise for the Mniotiltidæ and they were here found in greater numbers, both of species and of individuals, than elsewhere. Here, also, blackberries were in the height of their season; the deciduous foliage was as bright and fresh as in Ohio in May and June, and insect life correspondingly abundant.

With respect to the above-mentioned Warblers, it may be observed that their habits were not indicative of any migratory movement; on the contrary they appeared to be 'at home' in a summer resident sense; and the fact that the dates of observation are from two to four weeks ahead of their fall migration at Cincinnati may be considered as confirmatory of this view. Mr. Brewster's * observations in the adjoining portion of North Carolina, during May and June, 1885, are also to be considered in this connection.

Incomplete as it necessarily is, owing to lack of time and the unfavorable season for collecting, the present list fills several gaps in Mr. Brewster's paper just referred to, viz: *Totanus solitarius*, *Ægialitis vocifera*, *Falco sparverius*, *Megascops asio*, *Bubo virginianus*, *Helmitherus vermivorus*, *Dendroica cærulea*, and *D. vigorsii;* and adds five species and two subspecies to the list of birds heretofore recorded from the State †; namely: *Ampelis cedrorum*, *Dendroica pensylvanica*, *D. cærulea*, *D. cærulescens*, *Sylvania canadensis*, *Dryobates villosus*, and *Vireo flavifrons alticola*.

* An Ornithological Reconnaissance in Western North Carolina.—The Auk, 1886, Vol. III, pp. 94-112 and 173-179.

† *Vide* Fox, List of Birds found in Roane County, Tennessee, during April, 1884, and March and April, 1885.—The Auk, III, 1886, pp. 315-320.

For valuable assistance in making the collection, as well as in saving skins that would otherwise have been lost, the writer is indebted to his colleague, Dr. G. M. Allen, of Cincinnati; and for an enjoyable time in other respects to the members of the party in general, not forgetting our two guides, Mr. A. J. Dorsey and son 'Jake.'

As regards the residents of the region in general, we found them intelligent, hospitable and obliging.

The altitudes mentioned are estimated, and based on information derived from various sources.*

The nomenclature is that of the A. O. U. Code and Check-List of North American Birds, 1886.

Total number of species and sub-species noted, 63.

201. **Ardea virescens**. GREEN HERON.—Little River, near Mt. Nebo; two specimens.

256. **Totanus solitarius**. SOLITARY SANDPIPER.—One individual observed August 21, at a roadside pond near Maryville, in the valley.

263. **Actitis macularia**. SPOTTED SANDPIPER.—Three specimens seen along Little River in the 'coves'; others at Henry's Mill.

273. **Ægialitis vocifera**. KILLDEER.—One heard in the suburbs of Knoxville.

289. **Colinus virginianus**. BOB-WHITE.—Abundant in the 'coves.' Large flock of young barely able to fly, observed August 16, in Tuckaleechee; doubtless a second brood.

300. **Bonasa umbellus**. RUFFED GROUSE.—One individual observed on Mt. Nebo.

310. **Meleagris gallopavo**. WILD TURKEY.—Although no specimens were secured by us, our guide had flushed a flock of half-grown young a week previous. Dr. T. H. Kearney, of Knoxville, also informed us that he was with a party that killed one out of a flock a few days previous, within a mile or two of our camp. They are said to feed largely on 'huckelberries,' three species of which are found in abundance on the 'ridges.'

316. **Zenaidura macroura**. MOURNING DOVE.—Common in wheat-stubble in the 'coves.'

325. **Cathartes aura**. TURKEY VULTURE.—Common.

360. **Falco sparverius**. AMERICAN SPARROW HAWK.—Several observed in the 'coves.' Other species of Hawks, large and small, were noted, but at too great a distance for identification. Those most satisfactorily recognized were the Red-tailed and Red-shouldered.

373. **Magascops asio**. SCREECH OWL.—Identified by note; one individual only; altitude 2000 feet.

375. **Bubo virginianus**. GREAT HORNED OWL.—One heard at 4000 feet.

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* *Vide* Safford, Geology of Tennessee, 1869; and Guyot, various papers in Am. Journ. Sci. and Arts, 1857 *et. seq.*

390. **Ceryle alcyon.** BELTED KINGFISHER.—Two or three specimens observed on Little River in the 'coves.'

393. **Dryobates villosus.** HAIRY WOODPECKER.—Several specimens taken, ranging from the valleys up to 2000 feet, do not differ appreciably from Ohio examples, and are referred to this form by Mr. Ridgway.

394. **Dryobates pubescens.** DOWNY WOODPECKER.—The same remarks are applicable to the present species.

405. **Ceophlœus pileatus.** PILEATED WOODPECKER.—Not common, even in heavy timber, and everywhere very shy. Of the six or eight individuals observed, two, male and female, were secured with some difficulty. Ranging from the valleys up to 4000 feet or more, their favorite foraging field seemed to be on the larger spruce and poplar trunks, within twenty feet of the ground, and such places were studded with bill-holes, in regular rows, resembling those of the 'Sapsuckers.' Their notes resemble the rapid, oft-repeated *chuck-up-chuck-up-chuck-up* of the Common Flicker, but are lower-pitched and repeated more slowly.

Of the specimens taken, one had its stomach filled with fourteen pokeberries, and the intestines deeply stained thereby a few hours after death. The peritoneal cavity of this bird contained a slender tape-worm, about 15 inches long and 1-32 inch wide; and in the sub-cutaneous tissue of the neck were two thread-like, round worms, of a pale pinkish tint and about three-fourths of an inch in length. Irides of adult male, pale yellow, finely speckled and mottled with red.

406. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER.—Common about clearings in the foot-hills and 'coves.' Not observed above about 1500 feet.

420. **Chordeiles virginianus.** NIGHT-HAWK.—Five observed flying about at midday, in Tuckaleechee Cove; others at dusk on Scott Mountain.

423. **Chætura pelagica.** CHIMNEY SWIFT.—Common as high as 5000 feet and throughout the 'coves.' The scarcity of houses and suitable chimneys for breeding purposes probably necessitates the resort of this species to its original homes in hollow trees. (See Brewster, *op. cit.*)

428. **Trochilus colubris.** RUBY-THROATED HUMMINGBIRD.—Common up to 3000 feet.

444. **Tyrannus tyrannus.** KINGBIRD.—Observed in parties of six or eight about 'deadenings' in the 'coves.' None seen in the mountains.

461. **Contopus virens.** WOOD PEWEE.—The common Flycatcher of the region; apparently even more abundant than in Ohio. Noted everywhere up to 4000 feet or more.

The scarcity or absence of the *Empidonaces* was a noteworthy feature of the region; no member of the genus being detected, though closely looked for in apparently favorable localities.

477. **Cyanocitta cristata.** BLUE JAY.—An ornithological tramp throughout the region, in straggling parties of from three to six individuals; ranging as high as 4000 feet.

488. **Corvus americanus.** AMERICAN CROW.—Common in the valleys and observed up to about 3000 feet.

? 511*b*. **Quiscalus quiscula.** BRONZED GRACKLE.—Observed only in the suburbs of Knoxville. As no specimens were obtained, the subspecies can only be decided by inference—hence the (?).

For evidence that this is the prevailing form in Tennessee, *vide* Ridgway, Auk, 1886, III, p. 318, footnote.

529. **Spinus tristis.** AMERICAN GOLDFINCH.—Common in the 'coves,' and ranging up to 2500 feet.

560. **Spizella socialis.** CHIPPING SPARROW.—The common Sparrow. Abundant throughout the 'coves' in cornfields, etc., and a few observed on a piney ridge at an altitude of about 4000 feet.

563. **Spizella pusilla.** FIELD SPARROW.—Identified by note, and in one instance only, in a little 'cove' at an elevation of 3000 feet.

587. **Pipilo erythrophthalmus.** TOWHEE.—One specimen taken at an altitude of 2000 feet; others heard in full song.

593. **Cardinalis cardinalis.** CARDINAL.—Common about clearings, and observed up to 3000 feet.

Though in full song, their notes were quite sibilant in character rather than full and rounded as in Ohio.

598. **Passerina cyanea.** INDIGO BUNTING. — Very common in the 'coves' and lowlands; not observed above 1000–1200 feet.

(—). **Passer domesticus.** EUROPEAN HOUSE SPARROW. — A few observed at Knoxville and Maryville.

608. **Piranga erythomelas.** SCARLET TANAGER. — One specimen, a male in immature plumage, taken at 2500 feet.

610. **Piranga rubra.** SUMMER TANAGER. — One taken at 2000 feet; others heard.

611. **Progne subis.** PURPLE MARTIN.—Noted only at Knoxville and Maryville.

619. **Ampelis cedrorum.** CEDAR WAXWING. — One specimen in immature plumage, taken at 3000 feet.

624. **Vireo olivaceus.** RED-EYED VIREO.—Very common everywhere up to 4000 feet. The many specimens examined failed to show the peculiarities in plumage noted by Mr. Brewster* in a single specimen from the Black Mountain in North Carolina.

628. **Vireo flavifrons.** YELLOW-THROATED VIREO. — Two specimens; Pine Mountain, at 1500 feet. One of these is a 'first plumage' bird, just acquiring fall dress.

629*c*. **Vireo solitarius alticola.**† MOUNTAIN SOLITARY VIREO.—Three specimens taken; one at 1500 feet, on Pine Mountain (Chilhowee Range), and two at 4000 feet, on Defeat Mountain (Smoky Range).

Mr. Brewster has kindly compared these for me with the types in his collection and writes: "I am satisfied that the two are identical. In fact I find no differences of importance except such as would be expected in view of the fact that my birds are all in perfect nuptial plumage, yours in ragged, moulting summer plumage."

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* Auk, III, 1886, p. 173.

† *Vide* Brewster, Auk, III, 1886, p. 111.

On comparison with Ohio specimens of *V. solitarius*, the larger size, especially of bill and wing, and the generally darker color of the upper parts in the Tennessee birds are very noticeable

631. **Vireo noveboracensis.** WHITE-EYED VIREO. — One specimen taken; heard several times in the 'coves.'

636. **Mniotilta varia.** BLACK-AND-WHITE WARBLER.—Very common, ranging from the valleys up to 3000 feet.

639. **Helmitherus vermivorus.** WORM-EATING WARBLER.—Taken in dense laurel and blackberry thickets on Smoky Range, up to 4000 feet; and about ravines at Mt. Nebo, 2000 feet. Note a feeble *chip*.

654. **Dendroica cærulescens.** BLACK-THROATED BLUE WARBLER.—Rather common in dark spruce forest about the head of Little River, frequenting laurel thickets and undergrowth of poplar, beech, and sweet gum. Altitude about 4000 feet.

658. **Dendroica cærulea.** CERULEAN WARBLER. — Common in same localities as the last, but frequenting the higher trees.

659. **Dendroica pensylvanica.** CHESTNUT-SIDED WARBLER. — Two specimens; 2000 to 2500 feet, in oak woods.

662. **Dendroica blackburniæ.** BLACKBURNIAN WARBLER.—The most abundant species of the family; ranging from 2000 to 4000 feet, and keeping mostly in the higher tree tops. Adults of both sexes and young of the year taken together.

667. **Dendroica virens.** BLACK-THROATED GREEN WARBLER.—Several specimens taken at 4000 feet, in spruce woods.

671. **Dendroica vigorsii.** PINE WARBLER.—One specimen only; Pine Mountain, 1500 feet. A young in first plumage just acquiring autumnal dress.

674. **Seiurus aurocapillus.** OVEN-BIRD.—Taken at altitudes ranging from 1000 to 2000 feet.

681. **Geothlypis trichas.** MARYLAND YELLOW-THROAT.—Common in the valleys, in the weeds bordering streams.

683. **Icteria virens.** YELLOW-BREASTED CHAT.—One taken at base of Mt. Nebo; others heard.

684. **Sylvania mitrata.** HOODED WARBLER.—Common in little weed patches near the springs at Mt. Nebo (2000 feet); and one pair observed apparently 'at home' in a shady ravine near our camp on Defeat Mountain (4000 feet), keeping chiefly on or near the ground and moss-covered rocks. Note a single clear *tschip*, resembling that of the Cardinal but much more resonant and musical in tone. This note was repeated at short intervals (one to two minutes) for hours at a time, as the birds foraged for insects, the dark, green carpet of moss and partridge-berry vine forming an effective contrast with their bright, yellow plumage.

686. **Sylvania canadensis.** CANADIAN WARBLER.—A pair taken at 2000 feet, on young poplars in a laurel thicket, August 19.

687. **Setophaga ruticilla.** AMERICAN REDSTART.—Several observed about shady ravines, ranging from 1000 to 2500 feet.

704. **Galeoscoptes carolinensis.** CATBIRD.—A few only observed, ranging from the lowlands to 2000 feet,

718. **Thryothorus ludovicianus.** CAROLINA WREN.—Common everywhere up to 3000 feet.

727. **Sitta carolinensis.** WHITE-BREASTED NUTHATCH.—Common, ranging from 1000 to 3000 feet.

731. **Parus bicolor.** TUFTED TITMOUSE.—Very common in the valleys and observed as high as 3000 feet.

736. **Parus carolinensis.** CAROLINA CHICKADEE.—Common with the preceding species, of which it was an almost constant companion, as in Ohio. No *P. atricapillus* observed, although carefully looked for.

751. **Polioptila cærulea.** BLUE-GRAY GNATCATCHER.—Common, ranging from the lowlands up to 3000 feet.

755. **Turdus mustelinus.** WOOD THRUSH.—Specimens taken at 2000 and 4000 feet.

761. **Merula migratoria.** AMERICAN ROBIN.—While standing in the cupola of the University at Knoxville, a small Hawk, resembling the Pigeon Hawk, passed close by. Following it with the eye across an adjoining pasture, it was observed to flush a bird from a fence corner and, after a stern chase of thirty or forty yards, to seize it. A lively tussel ensued, after which the Hawk rose, heavily weighted, and took refuge in some neighboring trees. A few feathers secured at the site of the struggle have been kindly identified by Mr. Ridgway as those of a young Robin, and on these rests the admission of the species to our list, as no other specimens were observed.

766. **Sialia sialis.** BLUEBIRD.—A few noted about 'deadenings,' in the 'coves.'

SOME RARE FLORIDA BIRDS.

BY W. E. D. SCOTT.

Gelochelidon nilotica. GULL-BILLED TERN.—This species appears to be rare on the Gulf Coast. The only record I have of its occurrence is a male taken at John's Pass, Hillsboro' County, December 17, 1886.

Chondestes grammacus. LARK FINCH.—On September 19, 1886, I saw a single individual of this species in my garden at Tarpon Springs, Hillsboro' County. Later, my friend, Mr. J. W. Atkins, took an adult female at Punta Rossa. Mr. Atkins has kindly sent me the bird for identification. It was taken September 26, 1886.

Vireo altiloquus barbatulus. BLACK-WHISKERED VIREO.—

On my trip South during May, 1886, I heard at a number of points, but particularly near Punta Rossa, the song of a Vireo that was not familiar to me. The birds always kept in the deepest mangrove thickets, so that I was never able to procure one. But at Punta Rossa, where I met Mr. Atkins, who was at that time connected with the telegraph service at that point, we discussed the bird, and I called his attention to what I took to be one singing in a mangrove swamp not far away. I was, at the time, on my way home, and being somewhat pressed for time I could not well stay to investigate the matter. Shortly after my return Mr. Atkins wrote me of the capture of four of the birds in question, nd later sent me two skins which were, as we had surmised, of this species.

Both of those he sent to me were males taken on the 22d of May, 1886, near Punta Rossa.

During the summer, about the middle of July, I thought I detected the species on a single occasion near Tarpon Springs, and I feel quite sure of this now, though unable to capture the bird at that time.

I visited Tampa, in October, and on looking at some skins obtained by Mr. Stuart, in June, 1886, in the immediate vicinity of the city of Tampa, a single representative of this species at once attracted my attention. It was not labelled, but Mr. Stuart remembered its capture and thought it an adult male. It is now in my collection. I believe this bird to be a common summer resident on the Southern Gulf Coast of Florida.

Dendroica discolor. PRAIRIE WARBLER.—While at Punta Rossa last spring, Mr. Atkins showed me a Warbler which, though in exceptional plumage, must be referred to this species. Mr. Allen has very kindly examined it and compared it with a large series of Prairie Warblers, and the above conclusion is largely due to his careful examination. The appended description will show the main differences in coloration between this and the typical bird.

No. 129, collection of J. A. Atkins. "Punta Rossa, 16th April, 1886. ♀?" (The sex mark on the label is followed by an interrogation mark; the size of the bird, however, would seem to indicate that it is a female, if it be the species in question.) Similar to female *D. discolor*. Above obscure olive green, brighter on the crown and rump. Sides of nape and upper tail coverts strongly suffused with ashy; interscapulars faintly tinged with brownish. Tail and wings about as in typical *discolor*. Lores dusky; a

supraloral stripe of orange, from base of bill to eye, including upper eyelid; a patch of orange below the eye, more intense on the right side than on the left, extending back over the upper part of the ear-coverts, and forward narrowly (on the left side only) to the rictus. Chin and part of the throat intense cadmium yellow. There is also a very appreciable tinge of this color on the yellow of the breast. The maxillary stripe is ash mixed with black. The streaks on the sides are nearly obsolete. "Length, 4.50; extent, 6.37; wing, 2.00; tail, 1.75" (collector's measurements from the fresh bird).*

Mr. Atkins says that at the time he took this bird he saw another which appeared to him to be identical with it, but a careful search later in the season has failed to bring to light any other specimens.

THE PRESENT CONDITION OF SOME OF THE BIRD ROOKERIES OF THE GULF COAST OF FLORIDA.

BY W. E. D. SCOTT.

First Paper.

ON Friday, April 30, 1886, I started from the town of Tarpon Springs in Hillsboro' County, Florida, to make a cruise of a few weeks along the west coast, to investigate matters ornithological. It was a journey without any objective point. I had in mind only to go as far south as possible, in the time at my disposal, passing over some ground that had been familiar to me six years before.

* [The specimen in question is remarkable for its small size, it being considerably smaller even than average West Indian examples of females of *D. discolor;* one (of several kindly loaned me by Mr. Ridgway for comparison), however, proves to be fully as small, while others are somewhat larger. In a large series from Florida in the Cambridge Museum of Comparative Zoölogy, with which I have compared Mr. Atkins's specimen, none are quite so small, but the ashy coloring of the maxillary stripe, the auriculars, and sides of the nape is met with in other specimens, and one or two show traces of the peculiar 'hyperchromatism' displayed by the specimen from Mr. Atkins. No single specimen, however, has all of these ashy markings combined, they being found separately in different specimens. The asymetry in respect to the heightened color on the two sides of the head suggests that the specimen in question is not only exceptionally small, but abnormal in coloration. The general effect is unique, and at first sight suggests probable specific distinctness from *D. discolor*.—J. A. A.]

The boat chartered for the trip was a small sloop of about five tons measurement, called the 'Tantalus.' I was accompanied only by the captain of the boat, and Mr. Dickinson, my assistant. The somewhat detailed account of this journey presented in the following pages is given in the form of a diary, having as its basis the notes registered in my log of each day's events.

April 30. Left Tarpon Springs at 10 A. M., and going out of the Anclote River, our boat was headed southward. As we passed out of the mouth of the river, the buoys, beacons, and stakes that mark the channel were made very conspicuous by the numbers of Florida Cormorants (*Phalacrocorax dilophus floridanus*) that were alighted on every part of the structures that afforded a roosting place. These birds have a 'rookery' or breeding and night roosting place on Lake Butler, about three miles inland from the mouth of the river, and every morning and evening are to be seen passing to and from the salt water of the Gulf, which is their principal fishing ground. They fly in flocks of from six to forty, and now and then a single bird or pair is to be seen passing over. At the rookery breeding fairly begins by the 10th of May, though a few birds may lay their eggs a little earlier. The birds are among the very few still found in Florida that are unsuspicious, being fairly tame and familiar, passing close over the tops of the cottages and houses making up the town of Tarpon Springs in their daily flights over the land between the fresh and salt water.

The two islands in the Gulf of Mexico, three miles off the mouth of the Anclote River, are known as the Anclote Keys, and are the headquarters of the fleet of Key West vessels employed in the sponge fishing. Six years ago the smaller of these two keys was a 'rookery,' both for breeding and roosting, for countless pairs of birds. There were literally thousands of them. The several acres of breeding ground are closely wooded with mangrove and other trees and bushes, and each tree or bush of any size contained several nests. There were also the several kinds of Herons to be found here (I have records of *Ardea herodias*, *A. egretta*, *A. candidissima*, *A. tricolor ruficollis*, *A. cærulea*, *A. virescens*, *Nycticorax nycticorax nævius*, and *N. violaceus* as all occurring and probably breeding on this island), Cormorants in great numbers, and Brown Pelicans (*Pelecanus fuscus*). Besides, during May and June, hundreds of pairs of Frigate

Birds (*Fregata aquila*) roosted here each night, though these, so far as I am aware, did not breed here. This was the state of affairs existing on the northern of the two Anclote Keys six years ago, according to my own observations, and those of Mr. Devereaux, who was then my assistant. This morning in passing these islands I saw but four Pelicans (they were flying by), two or three frightened Herons, and a few Gulls and Terns. It is safe to say that not a dozen pairs of Herons breed at present on the island, and that the other birds spoken of have all been driven away or killed. Once, at this time of the year, a perfect cloud of birds were to be seen hovering all day over the islands, so tame and unsuspicious that they had little or no fear of man; but now the place is almost deserted by birds and the few that are left have become, by being hunted, as wary as the traditional deer.

We sailed to-day as far as Little Clearwater Pass, where we anchored and spent part of the afternoon and night. On the way down to Clearwater Harbor we passed inside of Hog Island, situated to the east of it. Here another deserted heronry,—a small mangrove island, which, when I passed it in 1880, had many Herons breeding on it,—stood a silent witness of wanton destruction. At Little Clearwater Pass the birds noted were numbers of Royal Terns (*Sterna maxima*), Laughing Gulls and Black Skimmers, a few Brown Pelicans and Willets, and Wilson's Plover. We staid here all night.

Saturday, May 1. The wind, which was blowing hard till late yesterday, died out in the night, but at sunrise there was almost a gale from the northwest, and we did not get away until 12.30 P. M., John's Pass, fourteen miles below, being the point where we intended to harbor for the night. With a beam wind this place was soon reached, and at 3.30 P. M. the sloop was again at anchor in the little harbor inside of the Keys.

It was important to reach here early, as I particularly wished to observe a rookery which has been ever present in my mind since visits to the same point in April, 1880.

At that time I made two visits of a day and night each to this same rookery, and among the myriads of birds that were breeding and roosting, the particular abundance of the Roseate Spoonbill, the Reddish Egret, and all of the common Herons, as well as the White Ibis, will never be forgotten. It is enough to state without going into great detail, that in one flock at that time were at

least two hundred wonderfully colored Spoonbills, and that the numbers of the other species were many times greater.

The numerous islands inside of the outer keys at this point are mostly wooded with one or more of the several kinds of mangrove, and vary in area from one to several hundred acres. The two nearest the mouth of the pass are small; the larger one may have an area of seven and the smaller of not more than two acres. They formed the site of the rookery. Looking carefully over both I could see no birds when we anchored, but as the sun began to get low in the west, a few, possibly fifty in all, shy and suspicious Herons straggled in to roost on the smaller of the two Keys, and a flock of Fish Crows (*Corvus ossifragus*) were the only visitors at the larger. Most of the Herons were *A. ruficollis tricolor*, but there were several *A. egretta*, *A. candidissima*, and *A. cærulea*, and perhaps a dozen *A. rufa*, and three of the so-called *A. pealei*. No Spoonbills, not a single White Ibis—in fact an utter transformation from the happy and populous community of only a few years before.

Of other birds seen here my log only speaks of some Royal and Least Terns, a flock of Willets, and a single Kingfisher.

Sunday, May 2. We were up and away early, with a pleasant northeast wind, and instead of going out of the pass again our route threaded in and out among the inner islands, passing through Boya Sieya into Tampa Bay proper. In Boya Sieya is an enormous mangrove island, known throughout the region as the Maximo Rookery, and also intimately associated in my mind with the name of A. Lechvallier, a Frenchman, who, when I was last at this point, had his home in a little house on the mainland of Point Pinallas, about half a mile from this rookery.

Being anxious to get south as rapidly as possible I did not examine Maximo Rookery carefully, but passing it only half a mile away I could see no birds. On my return, however, I made an extended search through the hundreds of acres of mangrove, and will leave the subject till then. But it may be as well to state distinctly here that I am very credibly informed that during his several years' residence at this point, the old Frenchman and his gunners killed many thousands of the several species of birds there so abundant. These were particularly the several species of White Herons and countless numbers of the Brown Pelican.

Passing on we crossed Tampa Bay to the mouth of the Manatee

River, thence following the bay coast down to the mouth of Sarasota Bay, and that night at six anchored at the town of Sarasota. To-day we had sailed over some sixty miles, in a region once famous for its teeming bird life, but now the birds were only conspicuous by their scarcity. During the entire day I only noticed a few scattering Herons, one or two Man-o'-War Birds, four or five Brown Pelicans, and a few Gulls.

Monday, May 3. Left Sarasota at 6.25 A.M. Day clear; wind in morning east to northeast, moderate. We sailed out through Big Sarasota Pass and were soon in the Gulf, running down the coast with a fair wind. About five miles off shore were many Brown Pelicans fishing among great schools of mullet, and a few Man-o'-War Birds sailing about in graceful evolutions. Here, too, were some Laughing Gulls, and now and then a few Royal or Forster's Terns, in small flocks of may be a dozen individuals. This was about a fair sample of the bird life all the forty miles down to Boca Grande, the principal entrance to Charlotte Harbor.

Here we entered, and going, after getting fairly inside, about two miles to the northward along the shore of Gasparilla Island, at 5.25 P.M. we anchored for the night. We were not more than a hundred yards from the shore of the island and almost at once I went ashore in quest of birds.

The island is a long, low strip of sand, wooded with a heavy growth of cabbage palms and some kinds of low palmetto. Beside these were two kinds of mangrove growing profusely, as well as a perfect tangle of low undergrowth of shrubs and vines. All of the commoner small species that one would expect were represented, and I saw a single pair of Reddish Egrets, two White Ibises, and three Louisiana Herons. The bird that particularly attracted my attention was a single male Bobolink, in *full spring* plumage. This seemed to me unusual, but I have seen large numbers of the same species in early fall, about Tarpon Springs. They appeared on the 26th of August, 1886, at the point indicated. The first flock was small, not over twenty birds, but in a week they were abundant and in very large flocks. About the middle of October they began to disappear, and by November first all had left the region about Tarpon Springs.

Tuesday, May 4. Charlotte Harbor! How many wonderful tales of the great heronries, with the myriads of birds every-

where conspicuous, have been told of this region. Indeed, only a few years ago bird life was so abundant about the many islands dotting the harbor, that it would be difficult to exaggerate in regard to their numbers.

We were up early, for I had determined to explore every island and bay about the harbor, and knew that at least a week or ten days would be a short time for the work in hand. An *all day's* sail along the northern shore of the bay, passing mangrove islands which seemed to have been created for the home of many species of Heron, Ibis, and other water birds which once congregated here in vast numbers.

Captain Baker, who sailed the sloop, an old sponger and fisherman who had been familiar with all of this country for twenty-five years or more, pointed out to me among these islands four, at different points, where he assured me vast rookeries had existed. One of perhaps sixty acres he said he had seen so covered with 'White Curlew' that, to use his own words, "it looked from a distance as if a big white sheet had been thrown over the mangroves." And though we passed by, as I have said before, islands that plainly showed, by excrement still on the ground, that once countless numbers of birds had lived there, sailing probably over about forty miles in all, I did not see a rookery that was occupied even by a few birds, and I only saw a few stray Gulls, Pelicans, and two Herons in the whole day's cruise. About four o'clock, P.M., we reached a little settlement at the mouth of Pease Creek, called Hickory Bluff, and I went ashore to get what information I could regarding birds.

The postmaster and several other citizens with whom I talked all agreed that five or six years before birds had been plenty at the rookeries, and that it was no trouble to get hundreds of eggs to eat or to kill as many birds as one cared to. But that for the past two years birds had been so persecuted, to get their '*plumes*' for the Northern market, that they were practically exterminated, or at least driven away from all their old haunts. I further learned that all of the gunners and hunters in the country round had up to this year reaped a very considerable income from this source. Birds were killed, and the plumes taken from the back, head, and breast, and the carcass thrown to the Buzzards. Fort Myers, on the Caloosahatchie, was the central local market for this traffic, where several buyers were always ready to pay a high

cash price for all plumes and fancy feathers. The force of resident buyers was increased during the winter of each year by taxidermists (?), and buyers from the north, who came, in some cases at least, provided to equip hunters with breech-loaders, ammunition, and the most approved and latest devices for carrying on the warfare. One man, who had come down in this way for the past four years, was down south now, and regularly employed from forty to sixty gunners, furnishing them with all supplies and giving so much a plume or *flat skin*, for all the birds most desirable. The prices, I was told, ranged from twenty cents to two dollars and a half a skin, the average being about forty cents apiece.

All this I afterward fully corroborated, and met, personally, the gentleman in question, to whom I shall have occasion later to refer more at length.

We staid at Hickory Bluff all night, as I had determined to explore the Myiakka River, which, I had always heard, was a bird paradise, and I was told at Hickory Bluff that birds were still to be found there in large numbers.

Wednesday, May 5. Left Hickory Bluff early, but the wind being very light and ahead, we were till nearly night reaching a point about ten miles up the Myiakka River, which is near the head of navigation for boats drawing two feet of water. The rookeries described to us as being near the mouth of the river, and where I was told birds had abounded the season before, I found to be deserted; only here and there did I see anything of bird life, and in such cases only scattering individuals of the Florida Cormorant, White Ibis, and the commoner species of Herons. Along the bank of the river, where we camped in the late afternoon, were many Gray Kingbirds (*Tyrannus dominicensis*), the first I had seen on the cruise, and the first I had noted this season. Going up the river we sailed close to three Ducks which, as they rose out of the water, I determined were *Aythya marila nearctica*. Near where we anchored were a number of Sandhill Cranes (*Grus mexicana*) feeding and now and then uttering their peculiar cry. A few Brown Pelicans and a single Man-o'-War Bird complete the list of birds observed this day.

It may be well to remark that the river is still salt at the highest point we reached, and that it is said to be brackish forty miles from its mouth.

Tuesday, May 6. As I had been told at Hickory Bluff that the largest of the rookeries was still further up the river, we took the small boat serving as our tender, and early in the morning started to explore. About a mile and a half from where we had anchored, on passing a sharp bend in the river, we saw a small mangrove island fairly white with birds, most of which I presently discovered to be the small White Egret (*Ardea candidissima*), and with them a number of *Ardea ruficollis tricolor*, and a few *Ardea egretta* and *Ardea cærulea*. The birds were in some cases still building, though some had finished their nests and had laid from one to three eggs. The *Ardea cærulea*, of which there were perhaps half a dozen pairs, were mainly in the blue plumage, though I saw a number in the white and particolored phases, and a female in this last condition, taken later in the day, proved on dissection to be breeding, having a fully developed egg with hard shell in the oviduct.

Up to the present time, though I had been away on the trip for a week, not a single bird had been collected. So after dinner I went to the neighborhood of the rookery, where about two hundred birds in all were congregated, and in the course of the afternoon I took some twenty birds of the several kinds above enumerated, a pair or so of each. The rookery had evidently often been disturbed before, and the birds were very shy and only to be taken at long range, flying. The whole island was wooded with mangrove and was perhaps half an acre in extent.

Friday, May 7. Spent most of the morning in making the birds I had killed the afternoon before into skins, and later in the day explored the river further up for about four miles. This search was unrewarded, and so we came back to the sloop, determining to go out of the river and continue the exploration of Charlotte Harbor in the morning.

While anchored at this point I was visited by two plume hunters, each separately, who wished to dispose of numbers of plumes of Little White Egrets and other birds they had collected. They seemed much surprised to find that I did not wish to buy the material in question, and told me that I was the only *bird man* they had met who was not eager to obtain plumes. The name of one of these men I did not ascertain, but the other was Mr. Abe Wilkerson, of whom I shall have more to say later. The prices they asked for plumes of Herons were about as follows:

Ardea egretta, 40 cents (the only part of the bird used being the long feathers of the back); *Ardea candidissima*, 55 cents (in addition to the back plumes, those of the throat or breast and head are utilized); *Ardea rufa*, 40 cents (simply the back plumes); *Ardea ruficollis tricolor*, 10 to 15 cents (only the plumes of the back are utilized); *Ardea wardi* (plumes of breast and back), 75 cents to one dollar; *Ajaja ajaja* (*flat skin*) $2.00 to $5.00. *A flat skin* is the bird skin split underneath from the bill to the vent and skinned so that the whole is perfectly flat when dry. Generally the legs are cut off, and sometimes the wings, and even the head.

These two hunters both told me of the man of whom I had heard at Hickory Bluff, and gave me much interesting information regarding the traffic in plumes. Wilkerson told me of the birds which once inhabited the rookeries of this river in great abundance. He had made, he said, many a dollar from plumes obtained here, and spoke of the little rookery I have described above as too small to be hardly worthy of the name. He was on his way to some lakes far up the river, in the interior, where he hoped to find large rookeries of the Little White Egret, which is regarded as the best paying species. His method of obtaining birds was with a 22-calibre Winchester rifle. With this he could go into a rookery and secrete himself, and by using the lightest kind of cartridge get many more birds than with a shot-gun, as the report is hardly greater than the snapping of a branch, and is scarcely noticed by the birds. In this way he said he had been able in a large rookery down south to get over four hundred 'plume birds' in less than four days.

On asking him about Reddish Egrets, I found he was full of information. He told me of a rookery he had recently visited at the entrance of Matlacha Pass, where there were many of these birds, and some in the white phase. He also said he had hunted the entire coast, and that below Marko Pass, the colored phase of the Reddish Egret became uncommon, while the white phase began to be more numerous, and that the form found in the rookeries of the Thousand Islands was the white phase, which is there quite plenty; he had never seen a colored bird there or south of there. I have this same information from a number of independent sources and consider it reliable. A word further as to the range to the northward on the Gulf Coast of the Reddish

Egret (*A. rufa*). I have not met with it at all north of the mouth of the Anclote River, at which point it is rare. In all the rookeries about Tampa, Old Tampa, and Hillsboro' Bays, it is more or less common, but its representatives are almost entirely in the colored phase, and only now and then, at rare intervals, is a white bird (*A. pealei*) met with.

(*To be continued.*)

SUPPLEMENTARY NOTES ON THE GENUS ACANTHIS.

BY LEONHARD STEJNEGER.

THE well-known Austrian ornithologist, Victor, Ritter von Tschusi zu Schmidhoffen, has most courteously sent me four specimens of *Acanthis cabaret* from Austria, thus enabling me to supplement my former paper (Auk, 1887, p. 31) on the subject with a few notes.

I stated that from the examination of an Italian specimen I was "strongly inclined to think that it will be necessary ultimately to recognize *A. rufescens* (Vieill.) as different from *A. cabaret*." The Italian specimen, as compared with British birds, differed chiefly (1) in being of a brighter and more ochraceous brown; (2) in having whitish (not pale umber brown) outer margins to the tail-feathers; (3) in having the flanks more heavily streaked; (4) in having dusky streaks across the fore neck, and (5) in having a decidedly smaller bill.

The four Austrian birds show conclusively that the above characters will not hold as distinguishing continental specimens from British ones. They are practically identical with typical British *A. cabaret*, and can be matched completely, and I have British specimens of *A. cabaret* before me which are considerably brighter in general coloration, and have the flanks more heavily streaked than the Austrian examples, none of which exhibit any dusky streaks across the fore neck. Of the latter two have whitish outer margins to the tail-feathers, while in the other two they are brownish, and as to the size of the bill, the table below de-

monstrates that the Austrian specimens have the bills larger, if anything, than the average British bird. (Compare tables in Auk, 1887, pp. 34, 35.) This table also shows how closely Austrian and British examples agree in general size.

It is hardly probable that the form inhabiting the mountains of Italy should be different from that breeding in the Austrian Alps, and I therefore now regard *A. rufescens* as a true synonym of *A. cabaret*.

MEASUREMENTS.

Sex and Age.	Locality.	Date.	Wing.	Tail-f.	Bill from Nostrils.	Furcation of Tail.
♂ ad.*	Hallein, Salzburg, Austria	Nov. 15, 1883.	71	53	7·5	10
♂ †	" " "	Oct. 21, 1883.	70	52	7·2	10
♂ †	Mariahoff, Steiermark, Austria	Feb. 24, 1881.	71	54	7·5	12
♀	Hallein, Salzburg	Oct. 21, 1883.	67	49	7·0	11
	Average measurements of three males		71	53	7·4	11

* Throat and breast red. † Without red.

THREE NEW FORMS OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

Mr. J. M. Southwick, of Providence, has called my attention to the fact that western specimens of the Willet differ in size, color, and markings from those of the Atlantic coast. Upon testing these differences by a fairly large series I find the birds of the two regions apparently distinct, at least subspecifically. The western form may be characterized as follows:

Symphemia semipalmata inornata, subsp. nov.—Western Willet.

Subsp. Char. *Male and Female, breeding plumage:*—Differing from *S. semipalmata* in being larger, with a longer, slenderer bill; the dark markings above fewer, finer, and fainter, on a much paler (grayish-drab) ground; those beneath duller, more confused or broken, and bordered by pinkish-salmon, which often spreads over or suffuses the entire underparts, excepting the abdomen. Middle tail-feathers either quite immaculate or very faintly barred.

Measurements: Eight specimens from Larimer County, Colorado, and two from Moody County, Dakota; all adults taken in May or June; average: Wing, 8.11; tail, 3.29; tarsus, 2.66; culmen from feathers, 2.46. The same birds give the following extremes: Wing, 7.88–8.26; tail, 3.10–3.50; tarsus, 2.45–2.95; culmen from feathers, 2.28–2.70.*

Types, No. 13,529, ♂ ad., Larimer County, Colorado, May 14, 1886; No. 13,530, ♀ ad., Larimer County, Colorado, May 5, 1885; both in my collection.

Habitat. Interior of North America between the Mississippi and the Rocky Mountains, wintering along the coasts of the Gulf and Southern Atlantic States (Florida, Georgia, South Carolina).

S. semipalmata typica is brownish-olive, above confusedly and densely barred, streaked, or spotted with blackish, this giving the prevailing tone to the plumage. The bars beneath are usually coarse, dark, regular, and seldom bordered with pinkish or salmon. The central tail-feathers are almost invariably crossed by three or four distinct and continuous blackish bars. The two birds do not seem to differ in respect to the white on the wings or upper tail-coverts.

Among the breeding (May and June) specimens before me the differences just pointed out are nearly constant, and so pronounced that they may be seen at a glance. They are less striking in some examples taken in early spring (March and April) in South Carolina, Georgia, and Florida, several of which seem to be fair intermediates, although they may be eastern birds which have not perfected the nuptial plumage. I have a few specimens (winter and early spring) from Georgia and the Carolinas which are apparently true *inornata*.

In the plain gray and white winter dress the two forms appear to be distinguishable only by size. Unfortunately, this difference is not absolutely reliable as the above measurements show. Rather curiously, the young, from whatever locality, seem to be larger than the old birds.

Touching briefly on synonymy it appears:

(1) That the *Scolopax semipalmata* of Gmelin (Sys. Nat., I, 1788, 659) was based on the eastern bird.

(2) That *Totanus crassirostris* Vieillot (Nouv. Dict. d'Hist. Nat., 1816, 406) was founded on a specimen (from Louisiana)

* An equal number of adult eastern birds, four from Georgia, five from Northampton County, Virginia, and one from Warwick, Rhode Island, average: Wing, 7.36; tail, 2.91; tarsus, 2.29; culmen from feathers, 2.19. Extremes: Wing, 7.06–7.75; tail, 2.71–3.30; tarsus, 2.08–2.42; culmen from feathers, 2.02–2.31.

in winter plumage, in which condition, as just stated, the two forms are not certainly separable.

(3) That *Symphemia atlantica* Rafinesque (Journ. Phys., LXXXVIII, 1819, 417) is a *nomen nudum*.

(4) That *Totanus speculiferus* Cuvier (R. A., I, 1817, 351) and Pucheran (R. et M. Z., III, 1851, 569) is not now determinable.

It follows that none of these names are available for the Western Willet, although it is not improbable that at least two of them (*crassirostris* Vieill. and *speculiferus* Cuv.) were originally applied to it.

Most of our recent authorities describe both forms under *S. semipalmata*, confusing them and attributing their differences to age, season, or individual variations.

I am indebted to Mr. Southwick for most of the specimens on which the above comparisons are based, as well as for permission to announce what is really his discovery rather than my own.

Phalænoptilus nuttalli nitidus, subsp. nov. — FROSTED POOR-WILL.

SUBSP. CHAR.—Similar to true *P. nuttalli*, but with the dark markings of the crown, back, etc., fewer and more sharply defined on a much lighter ground, the transverse bars beneath finer, paler, and less conspicuous.

Habitat. Texas and Arizona.

Types, Nos. 13076, ♂ ad., and 13077, ♀ ad., Nueces River, Texas, Feb. 27, 1886; F. B. Armstrong; both in my collection.

This bird seems to be another example of a 'bleached desert race.' It is very much paler than true *nuttalli*, with fewer, finer dark markings, which, however, are more conspicuous than in *nuttalli*, owing to the generally lighter ground color. This on the forehead, sides of crown, rump, upper tail-coverts, and scapulars is pearly or ashy white, giving the parts a delicate frosted appearance. The chin, sides of head, and a broad band around the nape are light faded brown, whereas in *nuttalli* they are many shades darker and (the chin and cheeks at least) often strongly blackish. That Audubon described and figured the darker bird is open to no doubt.

Texas specimens show little variation, several taken in February on the Nueces River being practically identical with a breeding female shot at Rio Grande City in June (No. 977, Coll. of

George B. Sennett). Arizona apparently furnishes both forms for a specimen from the Catalina Mts. (♂, No. 2177, Coll. W. E. D. Scott, April 19, 1885) is typical *nitidus*, while six others from the same locality are referable to *nuttalli*. The latter, however, do not average as dark as examples from further north. California birds are usually, but by no means invariably, the deepest-colored of all. It is not impossible that both *nuttalli* and *nitidus* breed in Arizona at different elevations, or one of them (*nitidus*) may occur only as a migrant. The evidence at hand seems to favor the latter view.

In Baird, Brewer, and Ridgway's Land Birds (Vol. II, page 417) the female Poor-will is described as "without the white tip of tail." This is obviously an error, for not one of the twelve females before me lacks the white, although in several it is more or less tinged with buff, and is, perhaps, also usually narrower than in the male.

The material examined in the above connection includes the entire series of the National, American (of New York), and Cambridge Museums, besides those of several private collections, the whole aggregating forty-one specimens—five from Texas, two from New Mexico, sixteen from Arizona, two from Colorado, five from Utah, four from Montana, one from Nevada, and six from California.

Vireo noveboracensis maynardi, subsp. nov.—KEY WEST VIREO.

SUBSP. CHAR. — In size and proportions similar to *V. crassirostris*, the bill equally large and stout. Coloring more like that of *V. noveboracensis* but grayer above, the yellow beneath paler (but of the same greenish or lemon tinge) and equally, if not more, restricted.

Wing, 2.20–2.53; tail, 1.90–2.07; tarsus, .70–.79; culmen from base, .55–.65; do. from feathers, .42–.50; do. from nostril, .30–.35; depth of bill at nostril, .18–.20

Habitat. Key West, Florida.

Types, Nos. 108,860, ♂ ad., Key West, Fla., March 29, 1886, Str. Albatross; 108,862, ♀ ad., Key West, March 29, 1886, Str. Albatross; both in collection of National Museum.

In general terms this bird may be said to combine the structural peculiarities of *V. crassirostris* with the coloring of *V. noveboracensis*. It has the long, stout bill of the former, the yellow beneath greenish instead of brownish, and essentially

confined to the sides as in the latter. That it is a connecting link between the two is evident, for several of the Key West specimens unmistakably approach *crassirostris*, while others vary in the direction of *noveboracensis*. With the latter, indeed, the large series before me* establishes a perfect intergradation. This seems to be effected within a narrow latitudinal belt, all my specimens from Northern Florida being essentially similar to those from the United States at large, the intermediates coming from Miami and the keys between that point and Key West. A bird from Cozumel Island is apparently typical *noveboracensis*, while two Bermuda specimens show only slight, and perhaps accidental, peculiarities.

Several of the Key West examples used in the above comparison were collected by Mr. C. J. Maynard, to whom the new bird is dedicated.

RECENT LITERATURE.

Sclater's Catalogue of the Cœrebidæ, Tanagridæ, and Icteridæ.—In the eleventh volume of the British Museum Catalogue of Birds† Dr. P. L. Sclater treats the three strictly American families Cœrebidæ, Tanagridæ, and Icteridæ—groups to which, as is well known, he has for many years given special attention. Of the family Cœrebidæ (Guit-guits, or Honey Creepers), 70 species are recognized, of which 63 are represented in the collection of the British Museum by 672 specimens. The members of this family are of small size, mostly of brilliant color; some are closely related to the Mniotiltidæ, from which they may, however, be distinguished by "the more slender unnotched bill and filamentous termination of the extensile tongue"; others are with difficulty separable from the Tanagridæ.

Of the great group Tanagridæ 377 species are admitted, all but 20 of which are represented in the British Museum Collection by 3413 specimens. Thirty-three species are referred to the genus *Euphonia*, 61 to the genus *Calliste*, 32 to *Chlorospingus*, and 35 to *Buarremon*. The total number of genera is 59.

* About one hundred and fifty specimens, chiefly from the collections of the National and Cambridge Museums.

† Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. Fringilliformes: Part II, containing the families Cœrebidæ, Tanagridæ, and Icteridæ. By Philip Lutley Sclater. London: Printed by order of the Trustees. 1886. 8vo, pp. xviii, 431, pll. xviii.

Of the Icteridæ 128 species are accepted, 125 of which are represented in the British Museum by an agregate of 1409 specimens. The whole number of species treated in the volume is therefore 545, represented by 5494 species. Means so ample, in the hands of a specialist so thoroughly competent for the task, cannot fail to give most satisfactory results.

The position of the Icteridæ next to the Tanagridæ, necessitated by the scheme of classification adopted by Mr. Sharpe for the Oscines, does not meet with Mr. Sclater's full approval, who considers the Tanagridæ as very closely allied to the Fringillidæ, and as being in fact "fruit and insect-eating Finches." The Icteridæ, he believes, would be better placed after the Fringillidæ, in the immediate neighborhood of the Sturnidæ.

Although subspecies are freely admitted, the system of nomenclature conforms to that of the previous volumes of the 'Catalogue.' The treatment of specific and subspecific forms is, in general, decidedly conservative; if, however, the author had followed, in certain instances, his own expressed convictions in place of deferring to the opinion of some previous author, the results would, we believe, have been more satisfactory.

Two species (*Arremon nigrirostris* and *Agelaius forbesi*) and three genera (*Pseudodacnis*, *Delothraupis*, and *Gymnostinops*) are indicated as new. Twenty-three species are figured.

The families here treated could not have fallen into better hands. The authorities of the British Museum are to be congratulated on having secured the assistance of Mr. Sclater for this work; and we are sure ornithologists will be rejoiced to learn that another volume of this invaluable series will be prepared by the same distinguished authority on American birds. —J. A. A.

Conclusion of the Great Work on the Nests and Eggs of the Birds of Ohio.* For several years we have noted the progress of this undertak-

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* *Collation:*

19 covertitles: Part [1-23 (msc.)] | Price $5. [later omitted] | Illustrations | of the | Nests and Eggs | of the | Birds of Ohio | with Text | by | Genevieve E. Jones and Eliza J. Shulze [names later omitted.] | Circleville, Ohio | 1879 [Dates omitted after Part 5] Copyrighted by Genevieve E. Jones and Eliza J. Shulze | [Dates, Stamped or Msc.]

Illustrations | of the | Nests and Eggs | of | Birds of Ohio | with Text. | Illustrations by | Mrs. N. E. Jones | Text by | Howard Jones, A.M., M.D. | Circleville, Ohio, U. S. A. | [1879 to] 1886. | Folio. Txt. in loose sheets; pll. plain lithog. or hand-col'd; pub. in 23 Parts. Text, pp. i-xxxviii, xxxviii *a-d*, 41-329. Plates i-lxviii.

Part 1, July, 1879 [there was a trial or specimen part pub. Dec. 1878] pp. 41-46, pll. i-iii. Part 2, Oct. 1879, pp. 47-54, pll. iv-vi. Part 3, Jan., 1880, pp. 55-58, pll. vii-ix. Part 4, April, 1880, pp. 59-66, pll. x-xii. Part 5, July, 1880, pp. 67-70, pll. xiii-xv. Part 6, Oct., 1880, pp. 71-82, pll. xvi-xviii. Part 7, Jan., 1881, pp. 83-90, pll. xix-xxi. Part 8, April, 1881, pp. 91-98, pll. xxii-xxiv. Part 9, July, 1881, pp. 99-106, pll. xxv-xxvii. Parts 10, 11 (Double No.), pp. 107-118, pll. xviii-xxxiii ("Oct., 1881" to) Jan., 1882. Part 12, Apr., 1882, pp. 119-122, pll. xxxiv-xxxvi. Part 13, July, 1882, pp. 123-138, pll. xxxvii-xxxix. Parts 14, 15 (Double No.), pp. 139-154, pll. xl-xlv ("Oct., 1882" to) Jan., 1883. Part 16, Apr., 1883, pp. 155-166, pll. xlvi-xlviii. Parts 17, 18 (Double No.), pp. 167-190, pll. xlix-liv ("July to") Oct., 1883. Part 19, Jan., 1884, pp. 191-206, pll. lv-lvii. Part 20,

ing in the pages of the 'Nuttall Bulletin' and of 'The Auk.' It now gives us real pleasure to record the completion of so meritorious and important a publication, pushed with every painstaking through a period of eight years to a successful termination. Circumstances have been against the authors in more ways than one, which one alone would have led most persons to abandon the project. But they have steadily persevered, and the result is one which will take its place among the most original and most notable treatises on ornithology which have appeared in this country. It might be going too far to say that the work does for caliology and oölogy what Audubon's did for its own subject; but if the drawings and writings of the latter had been confined to the birds of a single State, the comparison would hold. Several treatises on eggs and nests, more or less ambitious, have been essayed, but they have all broken down, though mostly projected under more favorable circumstances than this one. With little encouragement from high sources, with less assistance still, and with no adequate pecuniary support, it required courage, patience, and enthusiastic devotion to a purpose to accomplish such a result—circumstances which, in these days of that easy book-making which results in such hard book-reading, carry us in mind back to Alexander Wilson's appearance before the public with the first two volumes of 'American Ornithology' under his arm.

The work is simply admirable. Its cost may place it beyond the reach of many working ornithologists, but it should be found in our principal libraries, as we have no doubt that it will. In Ohio, at any rate, it should not be beneath the notice of the Legislature, with reference to those educational institutions which are under legislative jurisdiction.

Upwards of one hundred species of eggs are figured in colors by hand, usually with several specimens of each, showing the variations in size, shape and markings. Their average excellence—for they vary somewhat—has not been equalled in this country, and they are surpassed only by the best productions of foreign artists. No such series of the figures of nests has ever appeared anywhere. Nests are often introduced as accessories of figures of birds, as they were, notably, by Audubon, and many very pretty and effective woodcuts of these objects are extant. But these are a larger collection than have appeared together before; they are life-sized and life-colored—if such expressions be permitted, and many of them are introduced with their accessories. In some cases the eggs rest in the nest, and the whole effect is singularly true to nature. There is room for criticism, as where is there not? But we imagine few critics would speak,

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Apr., 1885, pp. 207-234, pll. lviii-lx. Parts 21, 22 (Double No.), pp. 235-286, pll. lxi-lxvi ("July to") Oct., 1886. Part 23, Dec., 1886, pp. i-xxxviii, xxxviii-*a-d*, 287-329, pll. lxvii-lxviii.

Title, etc., pub. with Part 23. Title, p. i; Dedication, p. iii; Preface, pp. v-viii; Introductory, pp. ix-xxxiii, including Lists of Ohio Birds: Key to the Eggs of the Summer Residents of Ohio, pp. xxxiv-xxxviii, xxxviii *a-d;* Main Text pp. 41-314; Etymological Key, pp. 315-320; Names of Subscribers, pp. 321-322; Index to Illustrations, pp. 323, 324; General Index, pp. 325-329.

if the condition of their being heard were, that they should be able to do as well themselves.

The text is very original, resting almost entirely upon the personal observations of the authors. It has no literary merit, unless directness and clearness be such. It resists the usual temptation to prepare full biographies of the birds, confining itself strictly to the subject in hand. Each article opens with general statements regarding the bird in its Ohion aspects, continuing with the 'locality,' 'position' and 'materials' of the nest, descriptions of the 'eggs,' 'differential points' of the same, and concluding remarks at large. The text is almost entirely from the pen of Dr. Howard E. Jones, and the plates have in nearly every instance been drawn from fresh material collected by this author, mainly in the vicinity of Circleville. The project was initiated by Miss Genevieve Estelle Jones and Miss Eliza J. Shulze, who determined in 1877 to make a series of colored plates. The sad death of the former young lady, August 17, 1879, and the withdrawal of Miss Shulze in April, 1880, threw the work upon the hands of the Jones family. Dr. N. E. Jones assumed the expense of the work, Mrs. N. E. Jones proceeded with the plates, Dr. Howard Jones (brother of Miss Genevieve) undertook the text as already said, and subsequently Miss Nellie D. Jacob of Circleville, Miss Josephine Kippart of Columbus, and Miss Kate Gephart, of Circleville, were engaged to assist Mrs. Jones in the coloring. Had the result been but a measured success instead of a remarkable accomplishment, great credit would have been due to all concerned.

The Introductory is a general sketch of the Birds of Ohio. It appears that of summer residents there are 129; of permanent residents, 41; probable residents and summer residents, 42. This category is followed by a systematic, annotated list, copied from Dr. J. M. Wheaton's work, noting 292 species known to occur in the State.

A quite original and peculiar 'Key to the Eggs' follows. The eggs are found to be groupable by color in the following manner: I. Eggs plain. A, white or whitish; 22 spp. B, blue or bluish, green or greenish; 17 spp. C, some other plain color as buff, etc.; 5 spp. II. Eggs marked. A, B, C, as before, as to ground color; A, 56 spp.; B, 20 spp.; C, 25 spp. And in every case in this remarkable set of tables, the eggs are not only thus classified, but described concisely, with measurements of length and breadth, the linear arrangement in each group being according to size. It is a very pretty and effectual piece of work.

Among appendicular matters is an 'Etymological Key,' in which Rev. S. H. McMullin undertakes to give the English equivalents of all the Latin and Greek names of the birds, and offers quite as much ornithophilologicality as the average bird-lover may require.—E. C.

Ridgway's Nomenclature of Colors and Ornithologists' Compendium.*

*A | Nomenclature of Colors | for Naturalists, | and | Compendium of Useful Knowledge | for Ornithologists. | By | Robert Ridgway, | Curator of Birds, United States National Museum. | With ten colored plates and seven plates | of outline illustrations Boston: | Little, Brown, and Company. 1886. 8vo., pp. 129, pll. i-xviii, faced by explanatory leaves.

—Mr. Ridgway's little manual will doubtless prove of great utility, and should meet with a hearty welcome. It consists of two parts. Of Part I, 'Nomenclature of Colors,' some twenty pages are devoted to 'Principles of Color,' and consist largely of directions as to the selection of pigments and their combination to form certain desired tints. This is followed by a 'Comparative Vocabulary of Colors,' giving the equivalent names in English, Latin, German, French, Spanish, Italian, Norwegian, and Danish, occupying nearly twenty pages more. Two pages of 'Bibliography' complete Part I, which is illustrated by ten hand-colored plates.

Part II is entitled 'Ornithologists' Compendium,' and is made up largely of a 'Glossary of Technical Terms used in Descriptive Ornithology,' which occupies nearly one-half of the book; it is illustrated by six plates of outline figures, three of which are devoted to the 'topography' or 'external anatomy' of a bird, two to various forms of color-marks on feathers, and one to egg-contours. Another plate gives a comparative scale of measurement standards, as the English inch, the French inch (pied du roi), and millimetres.

Part II closes with a table showing "the equivalents in English inches, and decimals thereof, of every tenth of a milimetre, from 1.0 to 100.9," and another "for converting English inches and decimals into millimetres." The author acknowledges his indebtedness to Dr. Leonhard Stejneger not only for suggesting these useful tables but for their preparation, and for aid in compiling the comparative color-vocabulary.

In Part I of the present work Mr. Ridgway has attempted a difficult task, requiring much research, a nice display of judgment, and other qualifications which only experience and skill as a colorist, combined with critical knowledge of the requirements of descriptive ornithology, could give. The details of the subject afford much latitude for a diversity of opinion; and whatever the results attained, they would be more or less subject to adverse criticism, especially in regard to the proper designation of particular shades of color. "Undoubtedly," as the author says, "one of the chief desiderata of naturalists, both professional and amateur, is a means of identifying the various shades of colors named in descriptions, and of being able to determine exactly what name to apply to a particular tint which it is desired to designate in an original description." There being no modern work of this character extant, Mr. Ridgway has very laudably attempted to supply the want. While he has supplied a standard for color nomenclature—and so far as we can see an excellent one—it fails by far, from the nature of the subject, to clear away all the difficulties, since the names of colors in current use are in many cases both vague and variable. The general adoption by future describers of the standard here set would do much to improve matters, and would give a uniform basis for color-nomenclature; but it would be, unfortunately, highly unsafe to attempt to make the standard retroactive, and interpret by it the color descriptions of the already existing literature. But this is no fault of the present author or his system; and his work as a whole cannot fail to be extremely useful. Part II must prove especially welcome to all beginners in ornithology, to whom, however, its usefulness will be by no means limited.—J. A. A.

Bryant on the Ornithology of Guadalupe Island.—In December, 1885, Mr. Bryant visited Guadalupe Island, and the results of his three and a half months' work there is given in a paper* of 50 pages, published in the 'Bulletin' of the California Academy of Sciences. The only previous exploration of the island in the interest of ornithology was made by Dr. Edward Palmer, in 1875, who obtained 72 specimens of birds, representing nine species, eight of them being land birds and new to science. To this list Mr. Bryant added 27 species, raising the total number now known from the island to 36. All but four of the species are land birds, and eight of them are peculiar to the island. Mr. Bryant's paper opens with a detailed account of the topography, climate, and vegetation of the island, which is followed by a copiously annotated list of the species, consisting of biographical notes of much interest, including descriptions of the nests and eggs of most of the resident species, of which nothing was previously known. Good series of specimens were obtained of most of the species met with, measurements of which are also included.

Although Dr. Palmer seems to have harvested the 'first fruits' (Mr. Bryant failing to obtain any species new to science), Mr. Bryant's paper admirably supplements Mr. Ridgway's papers on the bird fauna of the island, based on Dr. Palmer's collections, and forms a highly important contribution to the subject, leaving apparently little to be added by future explorers.—J. A. A.

Ralph and Bagg on the Birds of Oneida County, N. Y.—The 'Annotated List of the Birds of Oneida County, N. Y., and its immediate vicinity,'† by Dr. William L. Ralph and Mr. Egbert Bagg, though not "put forth as complete," is based on the observations of several years, and appears to have been compiled in a thoroughly scientific spirit and with due care, the authority being stated for such data as are not given on their personal knowledge. A few species have been included from having been found in neighboring counties, for which there is as yet no positive record for the county in question, but they are duly distinguished in the annotations, and are covered by the title in the phrase "its immediate vicinity." Many valuable observations are accredited to Dr. C. Hart Merriam (now of Washington, D. C.), and Messrs. A. L. Brainard and A. A. Howlet, of Syracuse. The List numbers 224 species.—J. A. A.

Platt on the Birds of Meriden, Conn.—Mr. Platt's List‡ appears to have strict reference to the town limits of Meriden, Conn., and to be based almost wholly on the author's personal observations. It is briefly annotated and numbers 116 species. The list is very attractively printed, and seems thoroughly trustworthy, so far as it goes, but is obviously in-

* Additions to the Ornithology of Guadalupe Island. By Walter E. Bryant. Bull. California Acad. Sciences, No. 6, pp. 269-318. ("Issued Jan. 5, 1887.")

† Trans. of the Oneida Hist. Soc., Vol. III, pp. 101-147, 1886.

‡ A List of the Birds of Meriden, Conn. By Franklin Platt. Trans. of the Meriden Scientific Assoc., Meriden, Conn., Vol. II, 1885-86, (Feb. 1887), pp. 30-53.

complete. The author has wisely, however, confined his list to the species positively known to occur.—J. A. A.

Maynard on 'Five New Species of Birds from the Bahamas.'—In a paper entitled 'Corrected Descriptions of Five New Species of Birds from the Bahamas,' published in an obscure trade journal,* Mr. C. J. Maynard has briefly characterized "provisionally, in advance of my [his] work on illustrations and notes of Birds of the Bahamas," the following species as new: *Pandion ridgwayi*, *Rallus coryi*, *Chamæpelia bahamensis*, *Ammodramus australis*, *Geothlypis restricta*. The *Ammodramus australis* is said to be "Rare in the Bahamas, but constantly resident in Florida." Most of the species are closely allied to well-known continental forms, to which they have been hitherto, and probably will be in future, commonly referred. But whatever their fate, Mr. Maynard most unwisely chose his medium for their publication, and was most unfortunate in the treatment his original article, published in a previous issue of the paper in question, received at the hands of the printer, it being so full of misprints, particularly in the scientific names, as to necessitate its republication in a corrected form; hence the title, as above cited. Mr. Maynard, not feeling sure that *Columba passerina* of Linnæus was not based on Bahama specimens rather than on examples from the main land, has taken the precaution to "propose the name of *Chamæpelia purpurea* for the larger continental dove"!—J. A. A.

Shufeldt's Contributions to Science.†—Dr. Shufeldt has recently published an annotated list of his scientific papers, numbering 123 titles. They embrace a wide range of topics, though mainly ornithological, and indicate great industry and intellectual activity on the part of their author. The list forms an exceptionally neat and well-printed pamphlet of twenty pages.—J. A. A.

Stejneger 'On the Status of Synthliboramphus wumizusume as a North American Bird.' Under this title‡ Dr Stejneger affirms that the only specimens extant of this species from North American localities prove to be immature or winter examples of *S. antiquus*. He therefore believes that "Until authenticated and undoubted American specimens are found, it may be expedient to remove *Synthliboramphus wumizusume* to the 'Hypothetical List' (A. O. U. Check List, p. 347). It is a case in many respects completely parallel to that of *Cepphus carbo*."—J. A. A.

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* The American Exchange and Mart and Household Journal, Vol. III, No. 6, Feb. 5, 1887, p. 69. (Boston and New York.)

† 1881–1887. | — | Contributions to Science | and | Bibliographical Résumé | of the Writings | of | R. W. Shufeldt, M. D., | Captain; Medical Department, U. S. Army | . . . . [=9 lines, titles]. | — | By their Author. | — | — | Press of L. S. Foster, New York. | 1887. 8vo, pp. 20.

‡ Proc. U. S. Nat. Mus., 1886, p. 524.

Ridgway on New Species of American Birds, etc.—A species of *Myiarchus** supposed to be from the Orinoco district of South America, is described as *Myiarchus coalei*. It is said to most resemble *M. nigriceps* Scl., and is from the collection of Mr. H. K. Coale. A new species of *Picolaptes* (*P. rikeri*) is described† from near Santarem, Lower Amazon, where it was recently collected by Mr. C. B. Riker. A new subspecies of *Cyclorhis* (*C. flaviventris yucatanensis*) is described‡ from three specimens taken in Yucatan.

Mr. Ridgway has also described a new Plumed Partridge from Sonora,§ under the name *Callipepla elegans bensoni*, based on five specimens taken by Lieut. H. C. Benson, U. S. A., in Sonora. Mr. Ridgway has also recorded a Woodpecker‖ supposed to be a hybrid between Nuttall's Woodpecker and Gairdner's Woodpecker, which in "every feature of size, form, and coloration" is exactly intermediate between these two species.—J. A. A.

Publications Received.—**Berlepsch**, Hans von. (1) On some interesting additions to the Avifauna of Bucaramanga, U. S. of Columbia. (Ibis, 1886, pp. 53-57, pl. iv.) (2) Kritische Bemerkungen zur Colibri-Literatur. (Separat. aus der Festschrift der Ver. für Naturk. zu Cassel. 1886.)

Berlepsch, Hans von, und Dr. Herman von Jhoring. Die Vögel der Ungegend von Taquara do Mundo Novo, Prov. Rio Grande do Sul. (Separat. aus der Zeitsch. für gesammte Orn., 1885.)

Blasius, R. (1) Ueber den Wanderzug des Tannhehers (Nucifraga caryocatactes L.) im Herbste 1885. (Braunschweigische Anzeigen, No. 164, 16 Juli, 1886.) (2) Der Dompfaff Brutvogel bei Braunschweig; Der diesjährige Wanderzug der Sperbereule (Surnia nisoria Wolf); Brutplätze des Alpenseglers (Cypselus melba L.). (Ibid., No. 305, 30 Dec., 1886.)

Bryant, Walter E. Additions to the Ornithology of Guadalupe Island. (Extr. Bull. No. 6, California Acad. Sci., Jan. 5, 1887.)

Carpenter, Frederic H. The occurrence of the Osprey in the Fauna of Bristol County, Mass. (Publ. Bristol Co. Orn. Club, No. 2, 1887.)

Dubois, Alph. Compte rendu des observations ornithologiques faites en Belgique pendant l'année 1885. (Extr. Bull. du Mus. roy. d'Hist. Nat. de Belgique, IV, 1886.)

Maynard, C. J. Corrected descriptions of five new species of Birds from the Bahamas. (Amer. Exch. and Mart. III, No. 6, p. 69, Feb. 5, 1887.)

Pelzeln, August von, und Dr. Ludwig von Lorenz. Typen der ornithol-

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* Description of a new species of Myiarchus, presumably from the Orinoco District of South America. By Robert Ridgway. Proc. U. S. Nat. Mus., 1886, p. 521.

† Description of a new species of Picolaptes from the Lower Amazon. Ibid., p. 523.

‡ Description of a new Subspecies of Cyclorhis from Yucatan. Ibid., p. 519.

§ Description of a new Plumed Partridge from Sonora (Callipepla elegans bensoni), Forest and Stream, Vol. XXVIII, No. 6, March 3, 1887, p. 106.

‖ On a probable Hybrid between Dryobates nuttalli (Gamb.) and D. pubescens gairdnerii (Aud.). Proc. U. S. Nat. Mus., 1886, pp. 521, 522.

ogischen Sammlung des k. k. naturhistorischen Hofmuseums, Wien. (Extr. Ann. des k. k. Naturhist. Hofmuseums, I, 1886.)

Platt, Franklin. A list of the Birds of Meriden, Conn. (Trans. Meriden Sci. Ass., II, pp. 30-53, 1887.)

Ralph, Wm. L., and Egbert Bagg. Annotated list of the Birds of Oneida County, N. Y., and its immediate vicinity. (Trans. Oneida Hist. Soc., III, 1886, pp. 101-147.)

Ridgway, Robert. (1) Nomenclature of Colors for Naturalists, and Compendium of Useful Knowledge for Ornithologists. 8vo. Boston: Little, Brown, and Company, 1886. (2) Descriptions of an apparently new Species of Picolaptes, from the Lower Amazon. (Proc. U. S. Nat. Mus., 1886, p. 523.)

Salvadori, Tommaso. Elenco degli Uccelli Italiani. (Ann. Mus. Civ. di Stor. Nat. di Genova, Ser. 2, Vol. III, 1887.)

Shufeldt, R. W. Contributions to Science and Bibliographical Résumé of the Writings of R. W. Shufeldt, M.D., etc., 1881-1887. 8vo. pp. 20. L. S. Foster, New York, 1887.

Stejneger, L. (1) On Turdus alpestris and Turdus torquatus, two distinct species of European Thrushes. (Proc. U. S. Nat. Mus., 1886, pp. 365-373.) (2) Review of Japanese Birds, Part II, Tits and Nuthatches. Part III, Rails, Gallinules and Coots. (Ibid., pp. 374-408.) (3) Notes on species of the Australian Genus Pardalotus. (Ibid., pp. 294-296.) (4) Description of Rallus jouyi, with Remarks on Rallus striatus and Rallus gularis. (Ibid., pp. 362-364.) (5) The British Marsh-Tit. (Ibid., pp. 200, 201.) (6) On the Status of Synthliboramphus wumizusume. (Ibid., p. 524.) (7) On a Collection of Birds made by Mr. M. Namize, in the Liu Kiu Islands, Japan, with descriptions of New Species. (Ibid., pp. 634-651.)

Swinburne, Spearman. Notes on Birds observed on Voyages between England and the Cape of Good Hope. Communicated by J. J. Dalgleish. (Proc. Roy. Phys. Soc. Edinburgh, IX, 1885-86, pp. 193-201.)

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Curiosity World, I, No. 6, Feb., 1887.

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Hoosier Naturalist, II, No. 4-6, Dec., 1886-Jan., 1887.

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Report of the U. S. Commissioner of Agriculture, 1886.

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Reports of the Micr. Soc. of West Chester, Pa., on an Act of the Assembly of Pennsylvania, awarding a premium for the Destruction of Hawks, Owls, Minks, Weasels, etc., 1887.

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Zoologist, XI, Nos. 121-123, Jan.-March, 1887.

GENERAL NOTES.

The Common Murre (*Uria troille*) and the Razor-billed Auk (*Alca torda*) on the New England Coast.—Among some birds received by Mr. F. B. Webster from a gunner at Eastport, Maine, December 27, 1886, I found three Murres. They were in the flesh and evidently had been dead only a few days. With them were sent one Brünnich's Murre (*Uria lomvia*), and no less than twenty Razor-billed Auks. The latter occurred in great numbers at various points between Eastport, Maine, and Provincetown, Mass., during November and December, 1886; ordinarily they are not common. The Brünnich's Murre, usually an abundant visitor in the late autumn, has been apparently nearly wanting the past season.—WILLIAM BREWSTER, *Cambridge, Mass.*

Capture of the Razor-billed Auk at Norfolk, Virginia.—By request of Dr. A. K. Fisher I send to 'The Auk' the following note recording the capture of the Razor-billed Auk (*Alca torda*) in the vicinity of Norfolk, Virginia. I am not able to state by whom it was shot, nor the date, but it was about the 15th of October. The bird was a male, in fine plumage and good condition. This, I believe, is the first one taken so far south.—FREDERICK S. WEBSTER, *Washington, D. C.*

Megalestris skua.—In 'The Auk,' Vol. III, No. 4, Oct., 1886, p. 432, I recorded what I supposed to be the third occurrence of this species in North America. A previous record of two seen on Nantucket Shoals, Oct. 11, 1883, may be found in 'Notes on the Habits and Methods of Capture of Various Species of Sea Birds that occur on the Fishing Banks off the Eastern Coast of North America, and which are used for bait for catching Codfish by New England Fishermen,' by Capt. J. W. Collins (pp. 13 and 14, of separate, extracted from the Annual Report of the Commissioner of Fish and Fisheries for 1882, pp. 323 and 324).—WILLIAM DUTCHER, *New York City.*

More News of Ardea wuerdemanni.—I have lately received from Mr. R. X. Stuart, of Tampa, Florida, four specimens of *A. wuerdemanni*, which were taken on the small island southwest of Cape Sable, Florida. Mr. Stuart writes me he procured six examples of this rare bird, as well as a fine series of *Ardea occidentalis*, which he found breeding in December, and obtained many eggs. Several sets of eggs of *Haliaëtus leucocephalus* were taken in the same locality.—CHARLES B. CORY, *Boston, Mass.*

Ardea egretta in Niagara County, N. Y. — In April, 1884, I reported to the 'Forest and Stream' the capture of three birds of this species in the adjoining county of Orleans, on Nov. 28, 1883. At that time I little expected that I would ever have an opportunity to mention its occurrence nearer home. But on the 18th of last August two specimens were brought to me, by different persons, for identification, both taken in the town of Newfane, this county, near the village of Olcott, on Lake Ontario. I did not have an opportunity to learn the sex, but took the measurements of one of them: Length, 36½ inches; wing, 15½; tarsus, 6. —J. L. DAVISON, *Lockport, Niagara County, N. Y.*

Further Notes on the Masked Bob-white (*Colinus ridgwayi*).—Mr. J. C. Cahoon, who is at present collecting in Northern Mexico, has just sent me ten specimens of the Masked Bob-white, taken February 5-8, 1887, in the province of Sonora, about fifty miles south of the United States boundary.

The eight males included in this series show an even greater range of variation than the ten birds of the same sex so carefully described* by Mr. Allen. Two agree closely with the male figured in Mr. Allen's plate, having similarly solid black foreheads and throats, and plain, rich cinnamon underparts relieved by only a few markings of black or white on the crissum and under tail-coverts. Both show traces of a white superciliary stripe, which in one extends forward to the front border of the eye, in the other to within about a quarter of an inch of the nostril.

The remaining six males have the mask and underparts more or less freely sprinkled with white. Rather curiously, those which have the most white about the head show the least beneath, and those which are largely white beneath have the mask nearly immaculate. In the specimen representing the extreme of the former condition the crown is scarcely darker than in *C. virginianus*, while a white stripe, averaging about one-tenth of an inch in width, extends along the side of the head from the nostrils to the nape, passing just over the eye. The chin, also, is nearly pure white, and the throat everywhere thickly spotted with white, the only unmixed black areas being a small patch just below the eye and a 'cravat' about half an inch wide on the jugulum.

The bird illustrating the other extreme has the central line of the abdo-

* Bull. Am. Mus. Nat. Hist., No. 7, July, 1886, pp. 273-290, pl. xxiii.

men soiled white and the remainder of the underparts behind or below the jugulum, excepting a small area in the middle of the breast, variegated everywhere with black and white, each feather having a pair of rounded white spots tipping its opposite webs, these spots being usually embraced between the horns of V-shaped, black markings. In this series the shade of the cinnamon of the underparts is in proportion to the amount of white, the cinnamon being palest in the birds having the most white, and deepest in those which have the least. This fact has suggested to me the possibility that the paler, spotted birds may be the young, and those with nearly or perfectly black masks and immaculate underparts the adults; but Mr. Allen's theory that such variations indicate near relationship to, if not actual intergradation with, the white-throated *C. graysoni* is perhaps more probable. I notice, however, that all the specimens examined by Mr. Allen (except my type, taken early in August, and an unusually deep-colored and black-headed bird) were killed in September and February, months when young or immature birds would naturally outnumber the fully mature ones. Mr. Ridgway's "suspicion" that *C. graysoni* and *C. ridgwayi* "may be individual color phases of the same species" seems to me the least likely hypothesis of the three, unless we may assume that the two 'phases' have different habitats; or, at least, that a portion of the region occupied by each phase is not invaded by the other.

Mr. Cahoon found the Masked Bob-white about Bacuachi and at a ranch some eighteen miles north of Cumpas. They were abundant (several large covies were seen and eight specimens shot in one day), haunting patches of weeds in gardens and barren "sand wastes, where they fed on the seeds of a plant called red-root." Their habits are like those of *C. virginianus* and their call-notes precisely similar. When scattered they lie very closely.—WILLIAM BREWSTER, *Cambridge, Mass.*

Capture of a Third Specimen of the Short-tailed Hawk (*Buteo brachyurus*) in Florida. — Mr. E. H. Forbush, of Worcester, has lately sent me a *Buteo brachyurus* which was shot by Mr. Charles E. Bailey at the head of Ten-Mile Creek (a tributary of the St. Lucie River), Brevard County, Florida, March 11, 1886. It is an adult female of the white-bellied form. Two specimens (one in the black plumage) have been previously recorded* from Florida by Mr. Ridgway. The occurrence of this third bird strengthens the suspicion that the species may have become permanently established in that State.—WILLIAM BREWSTER, *Cambridge, Mass.*

A Third New England Specimen of Swainson's Hawk (*Buteo swainsoni*). — Mr. E. S. Bowler has just sent me a Swainson's Hawk, taken at Gouldsboro', Maine, Sept. 15, 1886, by Mr. E. Gordon. It is a young bird of the melanistic type, but not wholly black. The species is known to have occurred only twice before in New England, both times in Massachusetts —Salem, winter of 1871–72 (*Allen*, Bull. Essex Inst., X, 1878, 22); Wayland, Sept. 12, 1876 (*Brewster*, Bull. Nutt. Orn. Club, III, 1878, 39).—WILLIAM BREWSTER, *Cambridge, Mass.*

* Bull. Nutt. Orn. Club, VI, 1881, pp. 210, 212.

A Migration of Hawks at Germantown, Pa.—On the afternoons of September 21 and 29, 1886, great numbers of Hawks passed over here. They flew in a westerly direction and were observed from 2 to 4 P. M. I did not notice them in the morning or on any of the intervening dates. On the 21st they came in a long line, two or three at a time; occasionally they would circle about and wait until others caught up with them and then all would pass on together; at no time during the afternoon was I able to count more than thirty in sight at once.

On the 29th a few dozen passed over as described above, and then came a large flock containing at least two hundred and fifty Hawks. When directly overhead they divided into two flocks and began circling about, and finally passed on to the west.

I could see that there were several different species in the flock, but they were too high up for me to identify them.—WITMER STONE, *Germantown, Pa.*

The Saw-whet Owl in the District of Columbia.—I have also the pleasure of recording the occurrence of the Saw-whet Owl (*Nyctala acadica*) in the District of Columbia. The first one was found by a farmer about October 3. It was lodged in the branches of a small tree, where it had evidently died; from what cause is not positively known. This bird has the habit of doing this sort of thing. A few years ago I obtained one that had died in this manner, and about the same time, I think the following year, I had three brought to me that were found in barns dead. This experience very conclusively proves to my mind the delicate make-up of this bird and its inability to cope with the adversities of bird life. About a week later, I am informed, two others were obtained by a farmer just outside of the District limits. I have not yet ascertained whether or not these two birds were shot or found dead, as all the others were that I ever obtained.—FREDERICK S. WEBSTER, *Washington, D. C.*

The Imperial Woodpecker (*Campephilus imperialis*) **in Northern Sonora.**—During a scouting expedition in the Apache campaign of last year Lieutenant H. C. Benson, of the U. S. Army, found this species to be common in the pine forests of the Sierra Madre, in Sonora, within fifty miles of the Arizona boundary. Owing to lack of time and facilities he was unable to preserve specimens, but a head which he sent to the National Museum renders the identification of the species positive. This magnificent bird—the largest of all known Woodpeckers, considerably exceeding the Ivory-bill in size (the wing measuring 11.70 to 13.20 inches and the exposed culmen 2.70 to 3.60 inches)—will doubtless soon be added to the North American fauna.—ROBERT RIDGWAY, *Washington, D. C.*

The Coppery-tailed Trogon (*Trogon ambiguus*) **breeding in Southern Arizona.**—A young male of this species, still in nestling plumage, though full grown, was collected August 24, 1885, in the Huachuca Moun-

tains, by Lieutenant H. C. Benson, U. S. A. This capture renders it extremely probable that the Trogon referred to by Mr. W. E. D. Scott in 'The Auk' for October, 1886, p. 425, as observed in the Chiracahua Mountains, was this species, which is the only one of the Red-bellied Mexican species whose range extends beyond the southern half of that country. Lieutenant Benson's specimen, which is now in the National Museum collection, will be described in full in the 'Proceedings' of the National Museum for 1887.—ROBERT RIDGWAY, *Washington, D. C.*

Capture of a Fish Crow (*Corvus ossifragus*) at Wareham, Massachusetts.—Inasmuch as my record (Bull. Nutt. Orn. Club, I, 1876, p. 19) of a Fish Crow seen at Cambridge, March 16, 1875, has been treated with wholesome caution—not to say incredulity—by several recent writers on New England birds, it gives me pleasure to present a second and quite unimpeachable instance of the occurrence of the species in Massachusetts. This time the bird was actually taken;—at Wareham, July 16, 1884, by Mr. E. A. Bangs, in whose collection the specimen is now preserved, and to whom I am indebted for the following account of its capture:

"I was fishing with my brother in Tihonet Pond and, as usual on such occasions, had my gun with me. While crossing the pond we saw two birds sitting on a tree near the mouth of a brook. From their actions I thought at first that they were Pigeons, but on getting nearer made out that they were black and resembled small Crows. We approached them with all possible caution, but they flew before we got within sixty yards. I brought down one, when the other circled over it for a moment, but it escaped before I could reload the gun (a single barrel). The one I killed proved to be a female in full plumage."—WILLIAM BREWSTER, *Cambridge, Mass.*

Occurrence of Agelaius phœniceus (L.) on the West Coast of England.—Additions to the useful 'List of Occurrences of North American Birds in Europe,' contributed by Mr. Dalgleish to the 'Bulletin' of the Nuttall Ornithological Club in 1880, will, doubtless, always be welcome in the pages of 'The Auk.' It affords me much pleasure to add to that list the capture of an immigrant specimen of *Agelaius phœniceus* (L.)—a species which has been recorded as occurring in Britain on at least a dozen occasions on evidence of a more or less satisfactory nature, some of the specimens being supposed escapes from confinement. The bird now to be recorded struck against the lantern of the Nash Lighthouse, on the Welsh Coast of the Bristol Channel, at 3 A.M. on the 27th of October last, and was intended to be forwarded to me by its captor, Mr. Henry Nicholas, one of the most valued observers of the British Association's Bird Migration Committee, but during his absence for a few moments was unfortunately carried off by the cat. Mr. Nicholas had no difficulty in identifying the bird by the aid of his books, but I at once sent him a skin of the bird (an adult) in order to test his determination of the species, and he replied "that the bird killed very much resembled the one sent ex-

cept that the yellow on the wings was rather paler; the tips of the wings and the back of the neck were more sooty black, and I think it was a little larger";—a description indicating an immature bird, which is what we should have expected, since it is from the ranks of these youngsters that nine-tenths of the erratic wanderers visiting our shores are recruited. The late hours of the 26th of October and the early ones of the 27th would seem, from the returns, to have constituted an important 'immigration night,' as a few particulars furnished from the schedule of the Nash Light will make manifest:—At 9.50 P.M., Missel Thrushes (*Turdus viscivorus*); at 10 P.M., Bramblings (*Fringilla montifrigilla*); at 10.30 P.M., Snipes (*Gallinago cælestis*), four of which struck and were killed; at 12.40 A.M., Redwings (*Turdus iliacus*), two killed; at 2 A.M., Wrens (*Troglodytes parvulus*), one captured; at 2.10 A.M., Robins (*Erithacus rubecula*), and Black Redstart (*Ruticilla titys*), killed; and finally at 3 A.M., the bird in which we are specially interested. The wind prevailing at the time was a strong easterly breeze; weather cloudy with passing showers of rain.—WM. EAGLE CLARKE, F. L. S., *The Museum, Leeds, England.*

The Redpolls of Massachusetts.—In his 'Revised List of the Birds of Massachusetts' Mr. Allen includes only two Redpolls, *Acanthis linaria* and *A. l. rostrata*. He does not give his reasons for excluding *Acanthis hornemanni exilipes*, but whatever they may have been, this bird has an indisputable right to a place in our fauna. I have examined the specimen taken by Jeffries at Swampscott, Nov. 16, 1878 (see Bull. N. O. C., IV, April, 1879, p. 121); that shot by Atkinson and recorded by Dr. Brewer (Proc. Bos. Soc. N. H., XX, 1879, p. 270); and a bird in the Cambridge Museum, to which Mr. Allen probably referred when he attributed *exilipes* to Massachusetts in 1870 (Am. Nat., III, p. 583), and all three are unmistakable examples of *A. h. exilipes*. To this number I can add the following, none of which seem to have been previously announced*:

A male in the collection of Mr. H. M. Spelman, taken Nov. 15, 1880, in Cambridge; a pair shot at Revere Beach, Mass., March 8, 1879, by Mr. Foster H. Brackett, and now in the collection of Mr. Charles R. Lamb; a pair killed at Revere Beach, March 9, 1883, by Messrs. Spelman and Chadbourne, the former of whom has the male, the latter the female; and a male shot at Nantasket Beach, Feb. 22, 1883, by Matthew Lucas, Jr., and in the collection of the present writer. All of the males just mentioned are in gray (immature ?) plumage.

Besides the forms above referred to, a fourth occurs, at least rarely, in Massachusetts. This is *Acanthis linaria holbœllii* Brehm, of which I have two examples,† shot together at Swampscott, March 26, 1883; both are males, one in gray plumage. the other a rosy-breasted adult (?).

* Several of them, perhaps, were incidentally referred to by Mr. Chadbourne (Quar. Jour. Boston Zoöl. Soc., Vol. II, April, 1883, p. 31).

† Dr. Stejneger has kindly examined them and confirmed my determination.

Thus of the five Redpolls attributed to North America at large four have been found in Massachusetts. Of these *A. linaria* visits us in abundance, but of course more or less irregularly; *A. rostrata* in smaller numbers, but still plentifully at times, as in February, 1883 (see Bull. N. O. C., Vol. VIII, pp. 95-99, recorded as *Ægiothus linaria holboelli*); *A. h. exilipes* in very limited numbers, and perhaps even less regularly than either of the two preceding; while *A. l. holbœllii* is apparently the rarest of the four and possibly a mere accidental straggler. The fifth North American form, *Acanthis hornemanni typica*, has never been taken within the limits of the United States.

As the recent shifting of names in this group is somewhat confusing it may be well to explain, that the *Ægiothus linaria holboelli* which I re-recorded* from Massachusetts in 1883 is the *Acanthis linaria rostrata* of the A. O. U. List, and the *Acanthis linaria holbœllii*, now for the first time reported from our State, another and very different form, much more nearly like true *linaria*, from which it can be distinguished only by its greater size and longer bill. Those who care to look further into this subject should consult Dr. Stejneger's able papers on the genus *Acanthis*.†—WILLIAM BREWSTER, *Cambridge, Mass.*

[The omission of *Acanthis hornemanni exilipes* from my 'Revised List' was due (1) to the fact that the then latest authorities on this group did not recognize *exilipes* as occurring south of "Arctic America and Northeastern Asia"; (2) in view of the recent radical shifting of names, and the supposed not wholly trustworthy identification of at least some of the specimens of '*exilipes*,' referred to above as recorded from Massachusetts, the omission of this form was thought to be the safer course, especially as the alleged specimens were not then accessible to me for examination.—J. A. ALLEN.]

Vireo solitarius alticola in Tennessee.—In my list of birds taken in Roane County, Tennessee (Auk, III, p. 317), I record two specimens of *Vireo solitarius*. Mr. Ridgway has since informed me that the specimens are typical of the new form *alticola*. Both specimens were females, and were taken at the foot of the ridge, in a grove of small pines.—WILLIAM H. FOX, M. D., *New York City.*

Another Specimen of the Prothonotary Warbler in Massachusetts.—Recently when examining the collection of birds made by Mr. E. O. Damon at Northampton, Mass., I saw a beautiful *Protonotaria citrea* which he told me he killed in that vicinity *on high ground*, in May, 1883, and that two other specimens were shot at the same time by a friend of his. These examples, additional to those already recorded by Messrs. Brewster and Purdie (Auk, July and Oct., 1886), would seem to indicate that the species enters New England regularly.—JNO. H. SAGE, *Portland, Conn.*

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* Bull N. O. C, VIII, pp. 95-99.

† Auk, I, 1884, pp. 145-155; ibid., IV, 1887, pp. 30-35.

An Overlooked Specimen of Bachman's Warbler.—Some time since, while working on the fine old Lafresnaye Collection in the Boston Society of Natural History I unearthed an interesting and valuable specimen, nothing less in fact than a Bachman's Warbler (*Helminthophila bachmani*). This bird agrees closely with Audubon's figure and description of the adult female, but differs from a female in Mr. Cory's collection by having a well-marked patch of black on the jugulum, and traces of a dark band across the fore part of the crown. The body plumage is fresh and perfect, but shows no indication of a recent moult; the primaries are somewhat faded; the tail-feathers decidedly faded and worn.

The label bore the inscription, "No. 4079, *Dendroica virens*, Gmel., N. America." This proved to be a correct transcript of the entry under the corresponding number in the fac-simile Lafresnaye Catalogue belonging to the Society, save that in the latter "N. America" is written *in pencil*. Going still farther back to the scrap-book where the original Lafresnaye labels are preserved, each numbered in red ink to correspond with the catalogue just mentioned, I found "4079" on a small slip of paper, yellow with age, the writing so faded that only "Sylvicola ——" can be certainly deciphered. The dash is followed by a mark resembling the sign ♀ (was this sign used in ornithology in Lafresnaye's time?) but probably intended for a ? There is also something that looks like "orig ne?"

The plain inference from these data is that the label last described was the original one belonging to this specimen, and that the person who wrote it (whether Lafresnaye or some correspondent from whom he may have had the skin) was unable to identify the bird. It is equally obvious that the locality entered in pencil in our copy of the Lafresnaye Catalogue was added, doubtless inferentially, after the specimen came into the possession of the Society. It follows that the origin of the bird is unknown. Can it be the female figured in Audubon's plate? If I am not mistaken, the latter has been lost sight of.—WILLIAM BREWSTER, *Cambridge, Mass.*

Remarks on Four Examples of the Yellow-throated Warbler from Chester County, S. C.—A series of four specimens, taken during September, 1886, display characters so different from those commonly ascribed to the Yellow-throated Warbler (*Dendroica dominica*) of the Atlantic States as to merit special notice. The variations in each are as follows:—

1. ♀. Bill (from nostril), 9.2 mm.; superciliary stripe without yellow; yellow of chin and maxillæ interrupted anteriorly by white.

2. ♂. Bill (from nostril), 10 mm.; superciliary stripe, above the lores, very faintly tinged with yellow for about 4 mm.; thence immaculate to the base of the upper mandible; chin and maxillæ as in the preceding.

3. ♀. Bill (from nostril) 9.5 mm.; superciliary stripe, anterior to eye, strongly tinged with yellow for about 4 mm.; otherwise similar to the foregoing.

4. Essentially like 3, but with tinge of yellow in superciliary more pronounced.

In the flesh the yellow in the eye-stripe of 3 and 4 appeared sufficiently intense to warrant their being assigned to *dominica;* but as a skin, the yellow in 3 is less prominent, and it might be referred without violence to *albilora*. Unless the white adjoining the base of the lower mandible be considered diagnostic, the determination of such intermediates seems to be a matter of considerable uncertainty, depending on doubtful estimates as to quantity and intensity of the yellow in the white line above the eye. —LEVERETT M. LOOMIS, *Chester, S. C.*

Discovery of the Nest and Eggs of the Western Warbler (*Dendroica occidentalis*).—During the past season (1886) Mr. C. A. Allen had the good fortune to find two nests of *Dendroica occidentalis* in Blue Cañon, California. The first contained two eggs on June 4. It was left for a full set, but on visiting it three days later, Mr. Allen found it in a dilapitated condition, the eggs broken, and their yelks smeared over the lining, evidently the work of squirrels. Of the eggs, Mr. Allen writes: "I cannot give you an exact description of these eggs, but in size and appearance they resembled those of *D. æstiva*, only they were more heavily marked on their entire surface. I am very sorry now that I did not take them, but I wanted the full set, which, I think, would not have exceeded three, as I found a nest seven or eight years ago with three young, and another with the same number while returning from my second visit to the nest with eggs. All three nests were similarly placed;—in 'pitch pines,' from twenty-five to forty feet above the ground, on thick, scraggy limbs, where they were so well concealed that it would have been impossible to find them except by watching the birds, as was done in each instance. The female of the nest that was destroyed was seen digging up fine roots from a logging road morning after morning, but I could never follow her to the nest, which I finally found by accident; happening to shoot a Douglass's squirrel in the adjoining tree, the report of the gun started her out."

The nest with young, taken June 7, 1886, is now before me. It is composed of the fibrous stalks of herbaceous plants, fine dead twigs, lichens (*Evernia vulpina*), and a little cotton twine, and is lined with the soft inner bark of some coniferous tree and fine long hairs, apparently from the tail of a squirrel. The bright, yellow *Evernia*, sprinkled rather plentifully about the rim, gives a touch of color to the otherwise cold, gray tone of the exterior and contrasts agreeably with the warm, reddish-brown lining. Although the materials are coarse and wadded, rather than woven, together, the general effect of this nest is neat and tasteful. It does not resemble any other Warbler's nest that I have seen, but rather recalls the nest of some Fringilline bird, being perhaps most like that of the Lark Finch. It measures externally 4.50 inches in width by 2 inches in depth. The cavity is 1.25 inches deep by 2.50 inches wide at the top. The walls at the rim average nearly an inch in thickness.

The three young taken from this nest, together with both their parents, were also sent me by Mr. Allen. The young are about two-thirds grown

and sparsely clothed with first plumage, which above and across the breast is uniform grayish-brown, on the abdomen yellowish-white. There are two light (brownish-white) bars on the wing-coverts.

If I am not mistaken, the nests and eggs just described are the first identified ones that have been thus far reported, but Captain Bendire writes me that he has what he believes to be "a set of these eggs taken at the Big Meadows on the banks of the Des Chutes River near its headwaters, on my way from Fort Walla Walla, W. T., to Fort Klamath, Oregon' June 12, 1882. The nest was placed in the crotch of a willow overhanging the water, and the parent shot, but falling into the river was carried away. The eggs have a faint grayish-green ground color; two of them are heavily spotted and blotched with lilac and dark umber brown. They are about the size of the eggs of *D. æstiva*, and resemble the eggs of *D. blackburniæ*, with the exception of the ground color, the green of which is not as perceptible as in the eggs of *blackburniæ*."—WILLIAM BREWSTER, *Cambridge, Mass.*

What constitutes a Full Set of Eggs?— The question as to what constitutes a full set of eggs, and how to determine the number with any certainty, is a matter to which I desire to call attention, and, in doing so, will say that I have given the matter considerable thought, and have reached the conclusion, on account of the many nest robbers of the birds, that the larger number is the only safe one to enter as a full set. For example, say thirty nests of *first* sets of a species are found, with birds sitting, as follows: Four nests with four eggs in each; six nests with three eggs in each; ten nests with two eggs in each; and ten nests with one egg in each. In this case I would enter three and four—possibly two to four—as a full set. But in no case one to four, believing the undisturbed birds of a species do not vary much, if any, as to number of eggs laid. Say four eggs in first set, and three in the second; that is, in case the first set is destroyed, or the birds rear two or more broods in a season; for I find as a rule that the first set is the larger one.

Many of the birds, especially the larger ones that breed in trees, as Hawks, Herons, etc., cannot hide their bulky nests; in fact, the branches overhead are more a protection to the thieves than to the nests when the parent birds are away; for all birds, however watchful, will, during the early stages of laying and love making, steal away from their nests a short time, for a sail or flirtation, which affords the cunning Crows, Jays, squirrels, etc., an opportunity to come up from the lower limbs and steal the eggs unobserved, or before the parent birds can return to protect them. Such robberies, and the advancement of incubation, make the birds more watchful and closer sitters. But, with all their vigilance, I think to find a full set the exception and not the rule. It is to the interest of paid collectors and dealers in eggs to have the smaller as well as the larger number treated as full sets. But the oölogist at heart, whether a collector or not, can have but one desire, and that is to arrive at the facts in the case.

In my 'Revised Catalogue of the Birds of Kansas,' I was governed in

giving the dimensions and coloration of the eggs by the sets examined, but I did not venture to change the number when given by other writers, lest such changes, based on my limited observation, might prove erroneous or misleading; but the more I look the matter over, its importance to my mind increases. I therefore call attention to it, hoping to draw out, through 'The Auk' and other sources, the views of others.—**N. S. Goss**, *Topeka, Kans.*

CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

The Camera and Field Ornithology.

To the Editors of the Auk:—

Dear Sirs:—A year ago last autumn I purchased me a first class photograpic camera with all the chemicals and appliances complete. In doing this I had three or four objects in view, in which it struck me that this instrument could be of very considerable assistance. In the first place, I was led to believe that it would prove a valuable auxiliary in my anatomical work, such as the photographing of certain dissections, osteological subjects, and the reduction in size of large skeletons that I intended to have lithographed to illustrate my memoirs. Secondly, I found myself in an Indian country that was rapidly undergoing those changes which an advancing civilization is sure to bring with it, and it was my aim to preserve, in the way of good photographs, much that pertained to their life, habits, and mode of living in the past, etc. Lastly, however, I felt that I had a very pretty field open before me that would, if worked with patience, yield another valuable series of figures for illustrative work, and this was the photographing in their native haunts many of the wild animals of the country. During the past ten years I have seen the time when I have been near enough to have obtained good photographs, either in the mountains or on the boundless plains, of such animals as our antelope, buffalo, mountain sheep, and a great many of the smaller mammals and birds. In this letter, however, it is my object merely to say a few words in regard to the advantages to be derived from the use of the camera in field ornithology. In the first place, if we can secure good photographic negatives of such subjects, the rapidly-improving processes permit us to transfer them with absolute accuracy to either metal or stone, and if I am not mistaken, to wood, also. Moreover, these processes are becoming cheaper and better every year that goes by, so that it falls within the means of nearly every scientific publishing medium to reproduce such drawings

from the negatives, and thus secure the most accurate class of figures of living birds.

Again, if we photograph, or rather print them on non-albumenized paper, they may be *colored* very nicely from the original subject. By the use of an 'instantaneous shutter,' I find that birds may be obtained in nearly all positions, and I know of no pursuit so thoroughly full of interest for the ornithologist as this photographing of birds in their native haunts. It requires, too, all the ingenuity at our command, to say nothing of patience, to pursue it successfully. Birds may be photographed in the most engaging of their avocations, and in the most interesting attitudes for illustrations that one can possibly imagine. Out here on the prairies we will often find an old stump or stalk, upon which a dozen or fifteen species of birds will alight during seven or eight hours, on almost any day suitable to use the camera upon them. Now all we have to do is to properly set up our instrument near this point, conceal it in such a way as not to alarm the birds, focus it sharply upon the perch where they alight, place on your 'snap shutter,' and fix it with a string, and then remove yourself far enough away to pull it, when you have a subject sitting to your liking. Birds that you have wounded but slightly may be photographed under the most favorable circumstances; they may also be taken while sitting on their nests; in actual flight, however swift; in pursuit of their food; in leading about their young; indeed, the list is almost an endless one.

Rookeries also offer admirable subjects, and a splendid field is open at those wonderful resorts of water-birds in such places as the Bahamas or the Alaskan coasts. In the former locality, during the breeding season, I have seen the time when I could have secured excellent pictures of the majority of species in the most interesting positions possible.

Even now, there are a great many of our birds that still remain to be figured, and a number that have already been produced,—yes, in some cases by so famous a master as Audubon,—that will repay reproduction. Take for instance his *Myadestes townsendi;* it is an exceedingly indifferent representation of the bird, and figures only the female besides. Moreover, it is evident from his illustration that Audubon was under the impression (he never having seen it alive) that its action was more or less akin to some such bird as a Redstart, whereas its behavior in life fails to remind us at all of any such species.

If I remember correctly, my photographic outfit cost me something like $125, but very good ones, I believe, can be purchased for about $50, which will take an excellent 5 × 8 picture. The art, in its present state of perfection, is a delightful study and brimful of interest. Never shall I forget my sensations, as, shut up in a small, dark room, lit only by the ruby lantern, I studied to develop my first plate of a living animal, taken by myself. It was a fine old *Neotoma*, and I can well remember my enthusiasm as I saw his form slowly, but sharply, come out on the plate, as I rocked it to and fro in the developing tray.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Feb. 10th, 1887.

Classification of the Macrochires.

To the Editors of the Auk:—

Dear Sirs:—Dr. Shufeldt's letter in the October 'Auk,' last year, requires only a few lines in reply from my side.

I am sorry that Dr. Shufeldt in "carefully reading a number of times" the sentence commencing: "internally they differ," etc., failed to see that the whole was a case of typographical error, and still more sorry that he did not know "the kind of comparison he [I] wishes to institute between the sternum of a Swift and a Swallow," when I referred to the bifurcate manubrium and deeply "two-notched" sternum of the latter. Dr. Shufeldt will probably believe me, when I state, that in the original, from which the sentence in question was quoted, the kind of comparison was made clear, and that the words "*pointed manubrial process and no posterior notches to the*"—an entire line—has fallen out between "*a*" and "*sternum.*" I cannot prevent Dr. Shufeldt from taking exception to the remark that the sternum is 'two-notched' in the Swallows, notwithstanding the fact that he admits its having "*a pair* of notches in its xiphoidal extremity," and my own belief that "a pair of notches" and "two notches" mean exactly the same thing. but I must protest against his remark that "the two-notched sternum is seen in such forms as *Picus.*" To the uninitiated mind it would seem to be a decided misnomer to call the sternum of *Picus* two-notched when the fact remains, that it possesses *four* notches. "Such forms as *Picus*" of course, have two notches *on each side of the mesial line*, but Dr. Shufeldt will probably pardon me for not calling a horse a two-legged animal, or a man a one-legged animal, notwithstanding the fact that they have respectively two legs and one leg on each side of the mesial line. But if Dr. Shufeldt calls a horse a four-legged animal, why object to calling the sternum of the Woodpeckers four-notched?

In regard to the similarity or dissimilarity of the flight of the Swifts as compared with that of the Swallows or Hummingbirds, I shall only remark that Dr. Shufeldt's supposition that I would never have asked, "what differences are there in the Swifts' flight from that of the Swallows' that should have caused such a remarkable modification towards the Hummingbirds," if I "had ever had the opportunity to compare in nature the flight of two such birds, for example, as *Micropus melanoleucus* and *Tachycineta thalassina*," will not hold for the simple reason that I have had the opportunity to compare in nature the flights of several species of Swifts and Swallows. I am also familiar with the flight of the Hummingbird, and in spite of this, or rather just on account of my observations, do I reiterate that the flight of the Swift is decidedly more like that of the Swallow than it is like that of the Hummingbird. And I also insist that I am still without an answer to the question, What in the nature of these birds' flight has brought about such an extraordinary similarity, osteologically, myologically, and pterylographically in the wing-structure of the Swifts and Hummingbirds, as compared with that of the Swallows? For surely, it cannot be denied, that the flying apparatus of Swifts and Hummers pos

sesses features and combination of features quite unique, and shared by no other birds, and especially not by the Swallows. That a Swift hovers in front of its nest before entering it "like a Hummingbird over a flower," shows certainly no special relationship, for I have seen despised English Sparrows do the same, and as for swift and precipitous flight and its instantaneous checking I might quote numerous birds which in their wing-structure show no analogy to that of the Macrochires. The *superficial* similarities of certain structures in the Swallows' and the Swifts' wings can undoubtedly be traced "to the modification of these structures gradually brought about by the habits or actions of the forms in question," to use Dr. Shufeldt's own phraseology. It is upon the recognition of the essential and the unessential similarities, and of the superficial analogies and the radical affinities, that the present question hinges.

Yours, very truly,

LEONHARD STEJNEGER.

Smithsonian Institution,
December 25, 1886.

TO THE EDITORS OF THE AUK:—

Sirs:—Will you kindly allow me a little space in which to reply to Dr. Shufeldt's comments on the footnotes of my recent paper on 'The Affinities of *Chætura*'?

At the outset let me say that I object less to the separation of Swift and Hummingbird than to the union of Swift and Swallow. As Dr. Shufeldt now concludes (or did in October last) that the Swifts are not a family of Passeres placed next the Swallows, but an order by themselves, we are less at variance than when the paper on *Chætura* appeared.

In one and the same paragraph Dr. Shufeldt objects to my statement that Professor Huxley united the Swifts and Hummingbirds, while quoting Huxley's own words, which show the statement to have been correct! (p. 86). The remark that Professor Huxley "evidently believed that Swifts were but profoundly modified Swallows" is purely an assumption; but even if it be a correct one, the fact remains that he believed them to be so *very* "profoundly modified" as to require a place in quite a different order. In view of the fact that Dr. Shufeldt has not been in Washington for over two years, it is a little surprising that he should assume to know exactly what material is contained in the collections of the National Museum. Nevertheless, Dr. Shufeldt is this time correct in his supposition, for at the time of writing neither *Panyptila*, nor *Tachycineta thalassina* (*T. bicolor* I *did* have) were in my possession, although since then crania of both species have been extracted from skins, supplied by the courtesy of Mr. Ridgway, and verify my statement that the *maxillo-palatines as figured by Dr. Shufeldt are imperfect.* While my specimen of *Panyptila* is a poor one, having suffered from decalcification, traces of the slender maxillo-palatines still remain, and show them to be practically of the same shape as those of *Chætura*, *Cypselus apus*, and *Dendrochelidon mystacea*,

this latter bird having been kindly furnished me by Professor Henry A. Ward. Dr. Shufeldt's very figure of *Tachycineta* shows at a glance that the expanded ends of the maxillo-palatines have been broken off, and I have yet to learn that doubling the size of a drawing doubles its accuracy.

I should have been very glad to have found myself in error concerning *Panyptila*, as it would have given me another, although slight, point of resemblance between the Swifts and Hummingbirds.

The material in the National Museum has already taught me that the sternum may be notched or entire in Auks of the same species, and the same thing will be found to occur in the Loons; also, if my memory is not treacherous, in other water fowl. The reason for this is, it seems to me, very evident, while the fact itself has no bearing whatever on the present case. That Dr. Shufeldt is aware of this is shown by his haste to remark that "Of course in recording what I have just done in the preceding paragraph, I by no means wish it to be understood that I in any way underrate the significance of the 'notching' of the xiphoidal end of the sternum, in the *vast majority* of birds." I would also note that the entirety of the posterior margin of the sternum was but one of *four* good characters pointed out. Since Dr. Shufeldt places but little reliance on the structure of the bony palate as a taxonomic character, has had his faith in the sternum shaken, and rejects the modifications of the limbs (aside from the modification of the phalanges, on which he lays considerable stress!), it would seem that but little of the skeleton was left on which to found comparative distinctions.

That the 'osteologist-in-chief' is not conversant with a large amount of ornithological literature is unluckily too true, and he has always regarded it as a great misfortune. Still, had my commentator been less engrossed by the footnotes, he might have inferred from a paragraph almost at the very outset, that I was not *entirely* ignorant of Dr. Parker's opinions on the subject under consideration.

In conclusion, allow me to express my surprise at the concluding paragraph of Dr. Shufeldt's letter, the sarcastic tone of which leads me to infer that he prefers to evolve opinions which do *not* compare favorably with those held by living masters in morphology.

Very respectfully,

FREDERIC A. LUCAS.

Washington, D. C., Jan. 25, 1887.

The Sense of Smell in Cathartes aura.

TO THE EDITORS OF THE AUK:—

Sirs:—In his article in the January number of this Journal, Mr. Ira Sayles has added another instance to the already long list of fallacious 'proofs' of the remarkable power of scent in the American Vultures. Ignoring the fact that there is certainly room for some difference of opinion as to what constitutes a remarkable power of smell, he sets aside as utterly

worthless the experiments of Audubon, Bachman, and Darwin, and offers his own chance observations as proof that these able and careful observers were entirely wrong as regards both their methods and conclusions. It seems almost superfluous to say that our critic can scarcely have read the original accounts of the experiments he condemns, or he would neither accuse so thoughtlessly nor explain so easily.

As to the anatomical evidence introduced, it may be remarked that such an argument from structure to function is often extremely unsafe, even for the accomplished anatomist, and the danger is greatest where the experience is least. True, Owen has shown that the Turkey Buzzard has well-developed olfactory nerves; but in the same paper (P. Z. S., V, 1837, p. 34, 35) where he records this, he states that the same nerves were found to be fully as well developed in the Goose, while even in the Turkey they were fairly developed, although only about one sixth as large. Furthermore, this distinguished anatomist, a part of whose testimony Mr. Sayles finds so "entirely satisfactory," closes his paper with the remark, that "The above notes show that the Vulture has a well-developed organ of smell, but whether he finds his prey by that sense alone, or in what degree it assists, anatomy is not so well calculated to explain as experiment." Again, according to Owen (Comp. Anat. and Phys. Vert., II, 132), the olfactory nerves are relatively largest, among birds, in the Apteryx; yet this bird appears to use its power of smell mainly for the detection of the worms which form its daily food, and for which it probes in the ground, thus apparently using its keen scent only at very short distances,—hardly more indeed than the length of its own bill.

Turning now to the personal observations of Mr. Sayles, let us consider the evidence which he calls "positive," yet which I regard as entirely inconclusive. In the first place, the data given us are very incomplete, and several of the most important points recorded were observed merely by chance, and before any significance was attached to them; and one can scarcely help questioning the accuracy of many of the details of such observations, especially when it is remembered that the occurrences narrated took place more than a dozen years ago, and we are not informed whether the narrator writes from memory or from notes taken at the time. It is doubtful whether, under the most favorable circumstances, the movements of Buzzards could be fairly watched at a distance of "more than two miles," and we are not even told how this distance was determined. Again, as the observations were simply accidental, it is more than possible that single Buzzards had already reached the place unobserved by our critic, but *not* without attracting the attention of the distant flock, which responded in the usual manner. In order to account for the coming of these first few individuals we have only to assume that the dogs had carried out and left exposed a few fragments of offal, which would readily be detected by any sharp-sighted Buzzard which chanced to be passing, or which may have been in the habit of visiting the plantation every morning. *

*In March, 1886, the writer received from S. E. Cassino & Co., the publishers of the 'Standard Natural History,' a lengthy criticism of his statements about the power of

Finally, the fact that the birds failed to find the source of the stench, and "gave up the search" after staying about "for an hour or two," is totally irreconcilable with the possession of such powers of scent as would enable them to detect the same odor at a distance of more than two miles.

If the space can be spared, I should be glad, in a future number of 'The Auk,' to discuss this subject further, and to give a brief *résumé* of the evidence on both sides of the question.

Respectfully,

Washington, D. C., March 4, 1887. WALTER B. BARROWS.

NOTES AND NEWS.

DR. JOHN M. WHEATON, one of the original members of the A. O. U. and well known as an ornithologist, died at his residence in Columbus, Ohio, January 28, after protracted illness from consumption, at the age of forty-six. Dr. Wheaton has for many years been an occasional contributor to current ornithological literature; his principal work, however, was a report on the Birds of Ohio, published in 1882, in the fourth volume of the Geological Report of the State of Ohio.* His unrivalled collection of the birds of Ohio is now at the State University. Dr. Wheaton was born at Columbus, and was educated at Davison University; he afterward studied medicine, graduating from the Starling Medical College in 1884, and immediately after entered the army as an assistant surgeon. In 1867 he was made Professor of Anatomy in the Starling Medical College, which position he held till his death. He was also a trustee of the college, and secretary of the board. He was a successful physician, a teacher of recognized ability, and held in high esteem by all who knew him. He leaves a wife and a son nine years of age. Dr. Wheaton's death is the first that has occurred among the Active Members of the A. O. U.

CONGRESS has appropriated $12,000 for carrying on the work of the Department of Economic Ornithology and Mammalogy for the year ending June 30, 1888. Now that the adjournment of Congress has brought some relief to the Government Printing Office, it is hoped that some of the long-expected special reports of the Department will soon be put in type.

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scent in Vultures, as published in Volume IV of that work. The criticism, which was by Mr. Sayles, embodied all the facts since published by him in 'The Auk,' and much additional matter on various subjects. In connection with the particular instance cited above, it was there distinctly stated that a flock of Buzzards was no unusual sight on the plantation, and that nothing was thought of it in this case until they were seen wheeling about the *open wood-shed* (the italics are mine) where, during the night, the pot of offal had been upset by the dogs.

* For a review of this work see Bull. Nutt. Orn. Club, Vol. VIII, p. 110.

THE bill authorizing an appropriation of $400,000 by the City of New York for the construction of an addition to the American Museum of Natural History building has passed both branches of the New York State legislature almost unanimously and has become a law. The addition will be at the 77th Street end of the present structure, and will be of about the same size as the portion already constructed. It is expected that work on the proposed addition will be begun at an early day.

TWO numbers of a new monthly journal, called 'The Audubon Magazine,' have appeared. It is "published in the interest of the Audubon Society for the Protection of Birds," by the 'Forest and Stream' Publishing Company of New York. Besides being a medium of communication between the friends of Bird Protection, it is intended to interest the young in the general subject of natural history, giving, however, special prominence to ornithology. Its purposes are excellent, and, under the editorial supervision of Dr. George Bird Grinnell, it promises to become a very acceptable and useful popular journal, covering essentially a new field, where much good may be accomplished.

ANOTHER very promising addition to periodical literature devoted to popularizing natural history is 'The Swiss Cross,' the new official organ of the Agassiz Association. It is a monthly, edited by Harlan H. Ballard, President of the Agassiz Association, and published by N. D. C. Hodges (the editor of 'Science'), at 47 Lafayette Place, New York. It is "devoted to spreading among the people an accurate knowledge of nature." Three numbers have already appeared.

THAT the interest in the subject of Bird Protection is earnest and widespread is evinced by the number of journals which are springing up devoted more or less exclusively to the support of the movement. Besides 'The Audubon Magazine,' noticed above, we have received three numbers (Jan.-March, 1887) of a monthly journal entitled 'The Bird Call,' published by the Pennsylvania Audubon Society, Miss A. C. Knight, President, No. 1012 Walnut Street, Philadelphia. This Society was organized in April, 1886, and duly incorporated the following August. 'The Bird Call' is issued in aid of the humane work of the Society—"to plead for mercy to God's messengers of beauty, use, and song," and to aid in "the campaign against the mandates of a cruel and senseless fashion." We wish 'The Bird Call' every success in its good work.

MR. C. J. MAYNARD has issued a prospectus of 'Illustrations and Description of the Birds of the Bahamas.' The work is to be large folio in size, and published in from fifteen to twenty parts, monographic in character. Each part is intended to be "an exhaustive treatise of the species under consideration, complete in itself," and will contain a colored plate and an uncolored one, the latter devoted to the osteological and other anatomical details described in the accompanying text, which will include biographical as well as technical matter. The first part, announced as

now ready "contains a finely colored plate on which are represented seven specimens of the Bahama Fruit Finch (*Spindalis zena*), covering all stages of plumage from nestling to adult," etc.

THE antedating of papers or works on natural history is an evil to which attention has often been called, and efforts have from time to time been made, on the part of both authors and editors, to guard against misdating. These efforts, however well intended, seem not always effectual, and even may make a bad matter worse. The dilatoriness of the Government Press in issuing reports and other works relating to science is notorious; such documents sometimes slumbering in the form of printed sheets for months and even years, before they are distributed to the public. Their authors are powerless, as are the would-be readers of these important scientific contributions, to secure their prompt publication; they frequently do not reach the public till a year or two later than the supposed date of publication borne on their title-pages. Cases of this sort are too numerous and too well-known to require specification; but it seems a pity that the Proceedings' and other publications of the National Museum should have to be added to the category of antedated publications. Presumably to fix the exact date of publication, each signature of the 'Proceedings' is dated with what is supposed to be the date of its issuance from the Government Printing Office; and generally the date has accorded reasonably well with the date of their reception by libraries and the specialists to whom they are sent. This, however, has not been the case of late, three or four months sometimes having elapsed between the presumed dates of publication borne on the sheets and the actual date of their distribution. In the interest of both science and veracity, it would be well to omit the dates altogether, or take some means to have them give correctly the information implied.

WE are pleased to learn that Mr. Charles F. Morrison, now of Fort Lewis, Colorado, Vice-President of the Bristol County, Mass., Ornithological Club, is engaged in the preparation of a complete list of the birds of Colorado, which will form 'Publication No. 1' of the recently organized Colorado State Ornithological Association, of which Mr. Morrison is President *pro tem.* The members of the Association are coöperating in the work, and excellent circulars of instruction have been issued by Mr. Morrison, calling upon them for full and carefully annotated lists of the birds of their respective localities. Doubtless good results may be safely anticipated from this carefully planned system of coöperation.

MR. THOMAS MCILWRAITH'S excellent little manual, entitled 'The Birds of Ontario,' comes to hand barely in time for this brief announcement. It form an octavo volume of 320 pages, published by the Hamilton Association, of Hamilton, Ontario.